HELSINKI SCHOOL OF ECONOMICS (HSE)
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DETERMINANTS OF DISCLOSURE LEVEL IN PUBLIC SECTOR ANNUAL REPORTS

Evidence from Finland

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ABSTRACT

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Objectives

During the past few years, approximately 60 % of all government agencies in Finland have published voluntary annual reports. Given the importance and recent trend towards increased disclosure in the public sector, the purpose of this study is threefold. The *first* goal is to find out factors that explain why some government agencies voluntarily publish annual report, whereas others do not. The *second* goal is to measure the disclosure level in the annual reports published by the agencies, i.e. what is the amount of financial and non-financial information conveyed by those reports. Finally, the *third* goal is to find out whether certain agency-related characteristics explain the cross-sectional variation of the disclosure level in the published annual reports.

Data and Methodology

The primary data comprises all annual reports published by Finnish government agencies for the year 2002. Out of 117, 70 agencies (59.8 %) voluntarily released these reports. The factors behind the likelihood of publishing a report is analysed with the parametric t-test and non-parametric Mann-Whitney test to see whether there are any systematic differences between the characteristics of the disclosing and non-disclosing agencies. In addition, parametric (Pearson) and non-parametric (Spearman) correlations as well as binary logistic regressions are used to analyse the likelihood of publishing an annual report. To measure the disclosure level in the published reports, a disclosure index composed of general (common), economic, social and environmental items is constructed. Finally, ordinary multivariate regression analysis is used to test the association between the level of voluntarily disclosed information and the characteristics of the agencies.

Results

Consistent with expectations, the findings indicate that voluntary publishing an annual report is more likely among agencies which (H1) do business with their stakeholders; (H4) are under management of certain ministries; and (H6) have many different system providers or have outsourced their system management. However, the findings do not support the hypotheses that the likelihood of publishing a report is related to factors such as (H2) the size of an agency; (H3) its leverage; (H5) location; or (H7) the orders of the State Audit Office. In addition, the results suggest that there is a large variation in the disclosure level of the published reports, as indicated by the minimum and maximum disclosure scores (0 and 17, respectively, out of the theoretical maximum 24). The findings show that, consistent with expectations, the amount of information voluntarily disclosed in the reports is relatively high among agencies which (H2) are large; (H4) are under management of certain ministries; and (H7) are not ordered by the State Audit Office to take any actions concerning its accounting or other procedures. In contrast to expectations, factors such as (H1) competition or the degree of business operations; (H3) leverage; (H5) location; and (H6) internal systems are not associated with the disclosure level of the annual reports published by the agencies.

Keywords

Disclosure Index, Public Sector, Annual Report, Government Agency, GRI, Accountability Theory, Agency Theory, Stakeholder Theory, Legitimacy Theory

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INFORMAATION MÄÄRÄÄ TILIVIRASTOJEN VUOSIKERTOMUKSISSA SELITTÄVÄT TEKIJÄT: Tuloksia Suomesta

Tavoitteet
Viime vuosina noin 60% Valtion tilivirastoista on julkaissut vapaaehtoisen vuosikertomuksen. Tutkimuksen kolme tavoitetta perustuvat vapaaehtoisen tiedonannon tärkeyteen ja lisääntyneeseen läpinäkyvyyteen, jotka nykyään koskevat myös julkisen sektorin organisaatioita. *Ensimmäisenä* tavoitteena on tutkia mitkä tekijät selittäisivät sen, että osa tilivirastoista julkaisee vapaaehtoisen vuosikertomuksen ja osa ei. *Toisena* tavoitteena on selvittää informaation määrää vuosikertomuksissa eli kuinka paljon tilivirastot sisällyttävät rahallista ja ei-rahallista informaatiota vuosikertomuksiinsa. Viimeisenä eli *kolmantena* tavoitteena on tutkia, selittävätkö tilivirastojen erityispiirteet vuosikertomuksissa olevan informaation määrän eroavaisuuksia virastojen välillä.

Aineisto ja menetelmät
Pääasiallisena aineistona on kaikki Suomalaisten tilivirastojen julkaisemat vuoden 2002 vuosikertomukset. Yhteensä 117:sta virastosta, 70:tä (59,8%) vapaaehtoisesti julkaisi kyseisen raportin. Vapaaehtoisen vuosikertomuksen julkaisua selittäviä tekijöitä analysoidaan parametrisella t-testillä ja ei-parametrisella Mann-Whitneyn testillä. Tämän avulla saadaan selville, eroavatko erityispiirteet systemaattisesti niiden virastojen jotka julkaisevat vuosikertomuksen ja niiden jotka eivät julkaise välillä. Tämän lisäksi, vuosikertomuksen julkaisun todennäköisyyttä tutkitaan parametrisella (Pearson) ja ei-parametrisella (Spearman) korrelaatiolla sekä logistisella regressioanalyysilla. Informaation määrää vuosikertomuksissa selvitetään sisältöindeksin avulla, joka koostuu yleisiä asioita, talousasioita, henkilöstöasioita ja ympäristöasioita mittaavista muuttujista. Viimeiseksi, vapaaehtoisesti vuosikertomuksiin sisällytetyn informaation määrää ja tilivirastojen erityispiirteiden välistä yhteyttä analysoidaan tavallisen monimuuttujaregressioanalyysin avulla.

Tulokset
Tutkimuksen hypoteesien mukaisesti vaikuttaa siltä, että vuosikertomuksen julkaiseminen on yleisempää niiden tilivirastojen joukossa, (H1) joiden maksuperustelain mukaisten liiketaloudellisten suoritteiden osuus kokonaistuotoista on suuri eli liiketoimintaa sidosryhmien kanssa; (H4) kuuluvat määrättyihin hallinnonaloihin; ja (H6) käyttävät useita järjestelmätoimittajia tai ovat ulkoistaneet järjestelmien hallinnan. Seuraavilla tekijöillä ei kuitenkaan näyttänyt olevan vaikutusta vuosikertomuksen julkaisemisen todennäköisyyteen, (H2) tiliviraston koko; (H3) sen velkaisuus; (H5) sijainti; tai (H7) Valtiontalouden tarkastusviraston huomautus koskien esimerkiksi taloushallintoa tai sisäistä valvontaa. Tulosten perusteella näyttää myös siltä, että informaation määrä vuosikertomuksissa vaihtelee rajusti. Vuosikertomukset saavat sisältöindeksistä arvoja 0 ja 17 välillä teoreettisen maksimin ollessa 24. Tulokset näyttävät, että informaation määrä on suhteellisen korkea seuraavia ominaisuuksia omaavien tilivirastojen vuosikertomuksissa, (H2) ovat suuria; (H4) kuuluvat määrättyihin hallinnonaloihin; ja (H7) eivät ole joutuneet ilmoitusvelvolliseksi Valtiontalouden tarkastusvirastolle. Odotusten vastaisesti erityispiirteet, kuten, (H1) liiketaloudellisten suoritteiden määrä; (H3) velkaisuus; (H5) sijainti; ja (H6) sisäiset systeemit eivät selitä vuosikertomuksissa olevan informaation määrää.

Avainsanat
Sisältöindeksi, Julkinen sektori, Vuosikertomus, Tilivirasto, GRI, Tilintekovelvollisuusteoria, Agenttiteoria, Sidosryhmäteoria, Legitimaatioteoria

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1. INTRODUCTION

Accountability is a term used in several different ways, but at its heart is a relationship between a principal who commissions a service and an agent who carries it out. For public services in modern democracies the principals are citizens who require an efficient public service. However, there are democratic pressure for increased transparency and accountability in government, consumer pressure for improved delivery of public services, cost pressure to provide more and better infrastructure and services, more efficiently.

1.1. BACKGROUND OF THE THESIS TOPIC

Boyne and Law (1991, p. 179) argue that the annual report is "the only comprehensive statement of stewardship available to the public". Coy et al. (2001, p. 14) concur stating: "The value of the (public sector) annual report rests in the provision of a wide range of summarized, relevant information in a single document, which enable all stakeholders to obtain a comprehensive understanding of (an entity's) objectives and performance in financial and non – financial terms. No other single source of such information is available to all stakeholders on a routine basis."

However, Jones (1992) argues that there is little public interest in the financial reports of public sector agencies. While this view is of the financial reports, not annual reports of public sector agencies, those financial reports account for only one aspect of what is (possibly) reported. Mayston (1992) recognises the problems with public interest in annual reports, and argues that while information may not be used directly by taxpayers, information provided is used by intermediaries. The interest in annual reports and the quality of disclosures in those reports is really "a chicken and egg" situation writes Likierman (1992). Public interest, he maintains, will increase when the disclosures and quality of annual reports improve over time. This view is endorsed by Coy and Pratt (1998) who argue that as the general level of education across society and the quality of reports improve, more stakeholders may take an interest in the accountability process. However, this study is aware about the possibility that many of the authorities are sceptical about the value of published financial statements or annual reports in this case, arguing that it is a waste of public money to produce published accounts that no-one reads, yes, the cost of providing additional information both financial and non-financial should always be considered. Though, the decision usefulness of annual reports or any other reports that agencies produce is not an objective of this thesis.

There is also a problem with what is included in a public sector annual report. The content of an annual report is decided upon by its author, and so the information which may cause difficulties and embarrassments can be omitted (Normanton, 1971). These thoughts are echoed by Coy and Pratt (1998, pp. 541-2) who argue that "The content and presentation of annual reports may have less to do with what are the best technical approaches, and be more the result of political compromises between the various interested parties."

1.2. OBJECTIVES OF THE STUDY

The purpose of this study is threefold. The *first* goal is to study what factors might have an impact on the likelihood of a government agency publishing an annual report, i.e. are there some determinants which could explain why 70 agencies publish an annual report whereas 47 do not? The *second* goal of this study is to find out what is the current disclosure level in the annual reports of government agencies of the republic of Finland, i.e. what is the level of financial and non – financial information in the annual reports? The *third* task is to study whether there are differences between the agencies' disclosure level in the annual reports and what factors might explain those differences, i.e. are there any associations between agency characteristics and disclosure levels in Finnish government agencies' annual reports?

The main assumption of this research is that the annual report is the key public accountability document which contains comprehensive details of all aspects of the entity's operations. Even though this is an assumption, there is still quite heavy empirical evidence from the private sector to back this up. Lang and Lundholm (1993) find a high, significant, and positive correlation between annual report disclosures and other forms of disclosure.[1] Knutson (1992) states, "At the top of every analyst's list (of financial reports used by analysts) is the annual report to shareholders. It is the major reporting document and every other financial report is in some respect subsidiary or supplementary to it". Surveys and other research document that the annual report is a vital, though not sufficient, source of information to analysts both in the United States and elsewhere.[2] Even though the studies are about private sector disclosure this study assumes that same relationship, specifically correlation between annual report and other sources of information holds when talking about public sector. In other words, annual report

[1] See also Holland (1998)
[2] E.g. AIMR (2000), Vergoossen (1993) and Chang & Most (1985).

should serve as a good proxy for the level of disclosure provided by a government agency across all disclosure avenues.

1.3. RESEARCH DESIGN

In Finland, 70 government agencies out of 117 published the totally voluntary annual report of the year 2002. This study analyzes all these agencies and annual reports. The research methods described below are very common in the previous studies concerning the same research area.

The *first* goal, likelihood of publishing is analyzed by using the parametric t-test[3] and non-parametric Mann-Whitney test to see whether there are any differences between the means or medians of explanatory variables (characteristics of the agencies) of the two groups which are the ones that publish an annual report and the ones which don't. The CHI-square test is used when the explanatory variable is dichotomous. Both parametric (Spearman) and non-parametric (Pearsson) correlation analyses are used to test whether there are relationships between the explanatory variables and the dichotomous publish variable. The likelihood of publishing an annual report is finally analyzed with so called binary logistic regression analysis which is introduced more thoroughly in section 5.3.2.

The *second* goal, disclosure level is analyzed by using mainly the same quantitative methods as above but in here the important part is the construction disclosure index which is meant to measure the level of voluntary disclosed information in the annual reports. The content and construction of the disclosure index is described more specifically in section 5.4.

The *third* and last task, the determinants of disclosure level is analyzed again by using the same quantitative methods as do previous analyses. Instead of binary logistic regression analysis, ordinary multivariate regression analysis is used to find out whether there are associations between the level of voluntary disclosed information in the annual reports and the characteristics of the agencies.

[3] t-test is used when the variables are normally distributed and otherwise Mann-Whitney.

1.4. CONTRIBUTION

It seems that prior related literature on public sector reporting in Finland is scarce, and the contribution of this study is to at least partly fulfill this gap. In author's knowledge no one has investigated the determinants of disclosure level in annual reports of Finnish government agencies. For example, according to the literature review in chapter three we do not know, why do some agencies publish an annual report and others do not, what is the current disclosure level in those annual reports, and what could explain the possible differences between the disclosure levels of the agencies. In addition, private sector studies concerning the determinants of the voluntary disclosure and the relationship between disclosure level and cost of capital are very vital areas of research in accounting and finance. Basis and goals of reporting practices in public and private sectors are different but still the theories originally developed for private sector could offer a theoretical framework also for public sector studies.

Concerning the theoretical and empirical framework, this study relies mainly on five public sector research papers and four private sector papers on disclosure level in annual reports. In other words, all the analyses, theories and methods are based on previous research, except a few new hypotheses. This thesis is a good extension to the quite narrow area of research of public sector external reporting and accountability, and it really brings new evidence concerning the three objectives introduce above.

1.5. RESULTS

Consistent with expectations, it seems more likely to publish an annual report among agencies which (H1) do business with their stakeholders; (H4) are under management of certain ministries (Ministry of Transport and Communications Finland, Ministry of Agriculture and Forestry, Ministry of Education); and (H6) have many different system providers and have outsourced their system management. However, inconsistent with expectations, determinants such as (H2) size; (H3) leverage; (H5) location; and (H7) State Audit Office's orders do not affect the likelihood of publishing an annual report. The more thorough analysis of hypotheses and other results of the first objective (likelihood of publishing an annual report) of this thesis can be found in section 5.6. and in chapter six.

The second objective was to find out what is the current level of both financial and non-financial information in the annual reports of Finnish government agencies. No hypotheses

were introduced because those would have been more or less speculative. However, the disclosure level in the annual reports varies a lot i.e. from 0 to 17 out the total possible score of 24. The readers can make their own analyses concerning the disclosure level based on for example information in section 5.4 and table 13.

Consistent with expectations, it is more likely to voluntarily disclose more information in the annual report among agencies which, (H2) are large, (H4) are under management of certain ministries (Ministry of Transport and Communications Finland, Ministry of Finance), and (H7) are not ordered by the State Audit Office to take any actions concerning its accounting or other procedures. However, inconsistent expectations, determinants such as (H1) competition or degree of business operations; (H3) leverage; (H5) location; and (H6) internal systems do not affect the disclosure level in annual report. The more thorough analysis of hypotheses and other results of the third objective (Association between Characteristics and Disclosure level) of this thesis can be found in section 5.6. and in chapter six.

1.6. ORGANIZATION OF THE STUDY

The next chapter *Overview to Institutional Arrangements* is about relevant regulation and recommendations concerning the level of disclosed information in the annual reports and financial statements of public sector both in Finland and internationally. In the chapter, The International Public Sector Accounting Standards (IPSAS) and Finnish GAAP are also analyzed, and the Global Reporting Initiative (GRI) concerning the reporting practices both in the public and private sector are introduced. There is also a short section on how the public sector reporting is organized in Finland and who the assumed stakeholders of the public sector agencies are. In matter of helping the potential readers, the summary of institutional arrangements is included. The third chapter *Survey of Literature* discusses the theoretical and empirical framework, earlier research and empirical studies and their boundaries. In this chapter theories like Accountability Theory, Stakeholder Theory, Legitimacy Theory, and Agency Theory are introduced. This chapter is mainly based on the private sector studies and theories due to the fact that there are not so many studies dealing with public sector reporting. In matter of helping the readers a summary of previous research is included.

The fourth chapter *Development of Hypotheses* introduces all the seven hypotheses which are mainly based on the previous studies and theories. The hypotheses test the likelihood of

publishing an annual report and the possible associations between the characteristics of the government agencies and the disclosure level in the annual reports of government agencies of Finland. The fifth chapter *Empirical Analyses* is divided in three sections according to the research goals. The sample selection and explanatory variables used in the empirical analyses are first introduced, the likelihood of publishing an annual report is analyzed, the disclosure level is analyzed and the possible associations between the characteristics of the government agencies and the disclosure level in the annual reports are analyzed. All the quantitative analyses (correlation analyses, binary logistic regression analyses, multivariate regression analyses, t-tests, CHI-square tests) are also reported in chapter five.

The sixth chapter *Summary and Discussion* provides a snapshot of the whole study and discusses the implications of its main findings. The chapter discusses the limitations of this study. Due to the scarcity of previous studies and quite easy access to the data needed in this kind of study there will be also suggestions for the further research. At last there are, *References and Appendices* containing all the references in alphabetical order and few not so relevant tables and figures.

2. OVERVIEW TO INSTITUTIONAL ARRANGEMENTS

Chapter two is divided into three sections which are; Guidelines & Regulation of Finnish Public Sector Annual Reports which discuss about the relevant regulation and guidelines both national and international concerning the public sector annual reports; Other Institutional Factors which is about the reporting environment of Finnish government agencies and the possible stakeholders of those agencies; and Summary of Institutional Arrangements which shortly summarizes all the institutional arrangements relevant for this thesis.

2.1. GUIDELINES AND REGULATION OF FINNISH PUBLIC SECTOR ANNUAL REPORTS

There is no regulation concerning the contents of the public sector annual reports in *Finnish GAAP*, to be exact publishing an annual report is totally voluntary for Finnish government agencies and so is the content. There is only a short mention about the possible annual reports of the agencies in the State Treasury's instructions. The following information is translated

into English from State Treasury's Instructions of the Financial Statements for Finnish Government Agencies.

"Besides the regulatory financial statements, agencies produce result reports[4] for the internal stakeholders and annual reports for the external stakeholders. Production of result reports is unregulated but necessary for the management point of view and with the help of the voluntary and unregulated annual reports agencies create & manage their agency image. Result reports and annual reports can't replace the official financial statement and if the official financial statement is published in the annual report it has to be clearly indicated which part (of the annual report) is the official (regulated) financial statement (Valtiokonttori 2000)."

Neither does *International Public Sector Accounting Standards* (IPSAS) says much about the possibly published annual reports and the contents. The IPSAS are drawn primarily from International Accounting Standard (IAS) 1; Presentation of Financial Statements published by the International Accounting Standards Committee (IASC) and the following paragraph (67.) says the following about the annual reports of public sector entities; "International Public Sector Accounting Standards apply only to the financial statements, and not to other information presented in an annual report or other document." Therefore, it is important that users are able to distinguish information that is prepared using International Public Sector Accounting Standards from other information which may be useful to users but is not the subject of Standards (IPSAS 2003).

Global Reporting Initiative (GRI) is a long-term, multi-stakeholder, international process whose mission is to develop and disseminate globally applicable sustainability reporting guidelines. These Guidelines are for voluntary use by organisations[5] for reporting on the economic, environmental, and social dimensions of their activities, products and services. Even though the Guidelines and GRI-based reports are not a substitute for legally mandated reporting or disclosure requirements, nor do they override any local or national legislation, those are relevant to discuss because few of the items in the Disclosure index of this specific study are based on these Guidelines. The choice among different media for reporting is also under respective organisation's control which means that the Guidelines do not say, for

[4] Tulosraportti in Finnish.
[5] Corporate, governmental and non-governmental organisations.

example, in what form should the organisation report about their environmental issues e.g. separate report, part of the annual report, web pages, etc. but demands for transparency and greater accountability are also being directed at the public sector. However, this thesis uses the annual report as a proxy for the level of transparency and disclosure of the Finnish public sector agencies.

In more detail, the GRI Guidelines are a framework fro reporting on an organisation's economic, environmental, and social performance also known as Triple-Bottom-Line reporting. This means that the Guidelines; Present reporting principles and specific content to guide the preparation of organisation-level sustainability reports; assist organisations in presenting a balanced and reasonable picture of their economic, environmental and social performance; promote comparability of sustainability reports, while taking into account the practical considerations related to disclosing information across a diverse range of organisations, many with extensive and geographically dispersed operations; support benchmarking and assessment of sustainability performance with respect to codes, performance standards, and voluntary initiatives; and serve as an instrument to facilitate stakeholder engagement (GRI 2002).

It seems that GRI Guidelines are not very popular amongst the public sector organisations. According to www.globalreporting.org there are only five public sector agencies which follow the Guidelines[6] but the situation is quite different amongst the private sector organisations, to be precise over 400 reporters in 43 countries and 13 in Finland.[7]

2.2. OTHER INSTITUTIONAL FACTORS AFFECTING ANNUAL REPORTS

According to Valtion tiliorganisaatiotyöryhmä (1995)'s memo, the government agency (Tilivirasto) is an organization which is determined by its own functions. It is some kind of administrative system which is responsible for certain accounting functions i.e. the so called agency functions and by doing all of this the agency serves the operative management. Size of the agencies varies a lot which means that an agency can be a whole ministry or just a school. Meklin (1997) writes that Ministry of Finance decides which entities, institutions and organizations operate as an official government agency (Tilivirasto). For example, Parliament

[6] Australia Commonwealth Department of Family & Community Services (FaCS); Greater Vancouver Regional District (Can); Hong Kong Architectural Services Department; New Zealand's Ministry for the Environment; and NHS Purchasing & Supply Agency (UK) (19.05.2004).
[7] Companies like; Nokia, Sampo, UPM-Kymmene and Kesko follow the GRI's sustainability reporting guidelines (19.05.2004).

of Finland, Ministries, Universities and State Provincial Offices are all official government agencies.[8] This study's sample contains all the 117 Finnish government agencies.[9]

Another important factor which might affect to the likelihood of publishing an annual report and the content of annual report is the nature of agency's functions. Meklin (2002) classifies the Finnish government agencies in five different groups; Production of free of charge services like the Finnish Defence Forces and Local Police Helsinki; Production of chargeable services / operations like Statistics Finland; Taxation and tax collection like the Finnish Tax Administration; Acting as a state authority like the State Provincial Office of Southern Finland; and Providing education and doing research like Helsinki School of Economics.

Kohvakka (2000) investigated Finnish government agencies' internal and external stakeholders' level of interest in agencies' regulatory balance sheet and statement of revenues and expenses. As a research method, Kohvakka (2000) send questionnaires to users and providers of agencies' accounting / financial information in respective 118 agencies and received 239 answers. The users and providers were asked to estimate different stakeholder groups' level of interest in financial information, to be precise balance sheet and statement of revenues and expenses. For example, 54% of the providers and users of the accounting information in the respective agencies answered that tax payers and service users are not at all interested in agencies' financial information. Summary of the estimations of the levels of interest can be found in table one. Of course, regulatory financial information such as balance sheet and statement of revenues and expenses is totally different compared to annual report which is almost totally directed to external stakeholders. However, stakeholders' level of interest in regulatory reports which agencies produce is very important institutional factor and it can be assumed as a proxy for the level of interest in annual reports. It would be interesting to see agencies' estimated levels of stakeholders' interest in annual reports.

[8] For more information, see table 13.
[9] 31.12.2002.

Table 1: Stakeholders' Estimated Interest Level in Agencies' Financial Information

Table one show the estimated stakeholders' level of interest in financial information. Kohvakka (2000) investigated Finnish government agencies' internal and external stakeholders' level of interest in agencies' regulatory balance sheet and statement of revenues and expenses. As a research method, Kohvakka (2000) send questionnaires to users and providers of agencies accounting / financial information in respective agencies (118) and received 239 answers. The users and providers were asked to estimate different stakeholder groups' level of interest in financial information (balance sheet and statement of revenues and expenses) i.e. 54% of the providers and users of the accounting information in the respective agencies answered that tax payers and service users are not at all interested in agencies' financial information.

	Estimation of the Level of Interest				
Stakeholders	**Very High**	**Quite High**	**Not Sure**	**Quite Low**	**Not at All**
Internal Stakeholders					
Agency's Management	4,2 %	15,2 %	8,0 %	38,0 %	34,6 %
Ministry of the Respective Agency	1,7 %	15,3 %	39,0 %	29,2 %	14,8 %
Other Ministries & Parliament	0,4 %	5,9 %	53,6 %	19,4 %	20,7 %
Other Agencies	0,0 %	3,0 %	43,5 %	21,1 %	32,5 %
Agency's Personnel	2,1 %	8,4 %	6,8 %	46,4 %	36,3 %
Personal Usage	7,8 %	30,2 %	4,7 %	44,4 %	12,9 %
External Stakeholders					
Tax Payers & Service Users	0,4 %	1,3 %	22,4 %	21,9 %	54,0 %
Partners	0,8 %	0,4 %	21,5 %	24,9 %	52,3 %
Potential Competitors	0,4 %	2,6 %	33,2 %	17,4 %	46,4 %
Media	0,4 %	2,5 %	22,8 %	30,4 %	43,9 %

2.3. SUMMARY OF INSTITUTIONAL ARRANGEMENTS

There aren't international or domestic regulations or laws concerning the content of published annual reports and the production of the annual reports totally voluntary for the Finnish government agency. It seems that, in the eyes of the regulator, the reports are concerned as a tool to manage the image of the agency not as a report of accountability, for example.

In recent years, sustainability reporting has been recognized as a key component of corporate transparency and accountability. There is now a parallel and growing interest in reporting as a tool to enhance transparency in the public sector. This interest creates a need for harmonization of reporting practices to ensure comparability and consistency both amongst public sector organizations as well as between private sector reporting and public sector reporting activities.[10] These international guidelines of GRI are seemed to be more and more popular especially among private sector organizations.

Other institutional factors possibly affecting the likelihood of publishing an annual report of the content of annual report are also discussed. It seems that an agency's function in society could affect, for example to the willingness of voluntary[11] disclosing information in the

[10] For more information, see www.globalreporting.org

[11] Voluntary disclosure can be concerned as everything above minimum requirements e.g. the law.

annual report. According to Kohvakka (2000), the views and estimations of both information providers and information users could also affect the disclosure level in annual reports or even likelihood of publishing an annual report. It seems that there are still open questions about the relevance of the whole annual report if using, for example the external stakeholders' s estimated interest in balance sheet information as a proxy for the interest in agency's annual report. However, the relevance or decision usefulness of any kind of report agencies produce is not an objective of this study.

3. SURVEY OF LITERATURE AND PREVIOUS RESEARCH

Big picture questions such as; Accounting information; the organizations that produce it and use it to evaluate their employees; the persons who use this information in allocating capital to firms; and the persons who produce, verify, regulate and interpret this information, are important and much research remains to be done before we can confidently answer them. Chapter three shortly summarizes the relevant studies and theories of disclosure and it is divided into three sections in respective order; Theoretical Research which introduces all the relevant theories concerning the organizations' willingness to disclose information about itself; Empirical Research which shows the most relevant studies about the disclosures in annual reports, both in public and private sectors; and Summary of Literature and Previous Research which shortly summarizes all relevant theories and observations.

3.1. THEORIES OF DISCLOSURE AND ACCOUNTABILITY

The main theories concerning the voluntary disclosure, disclosure in general and accountability are discussed in this section. The following theories try to explain why organizations (should) report about their actions, for example in the form of annual report, financial statement, web-pages, etc. The public sector accounting and private sector accounting are not identical twins, of course and all the theories may be more suitable for private sector organizations but still offer a good theoretical framework for the public sector, as well.

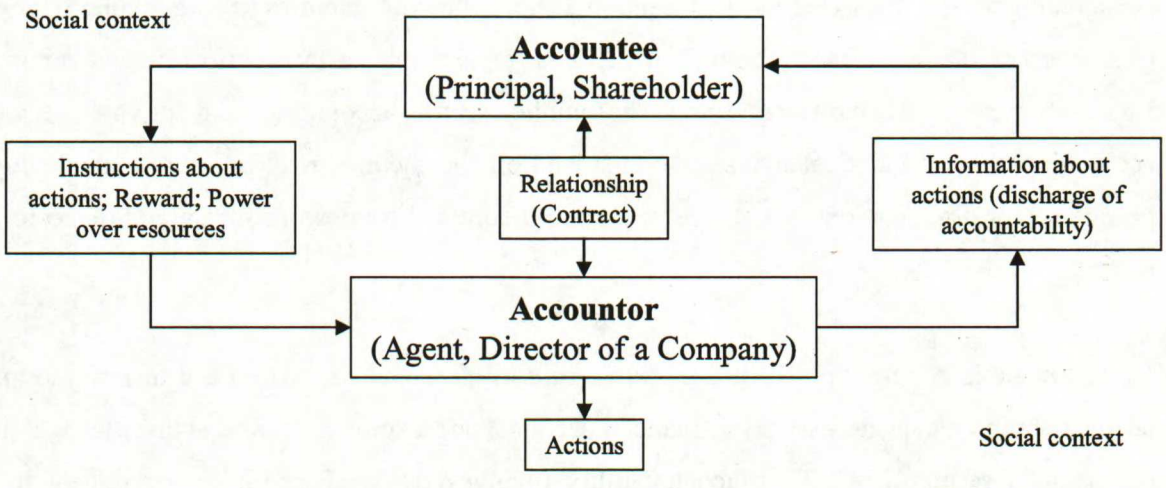
Gray, Owen & Adams (1996) define *Accountability (Theory)* as: "The duty to provide an account (by no means necessarily a financial account) or reckoning of those actions for which one is held responsible." Thus accountability involves two responsibilities or duties: the

responsibility to undertake certain actions (or forbear from taking actions) and the responsibility to provide an account of those actions. In the simplest case, that of the shareholders and a company, the directors of a company have a responsibility to manage the resources (financial & non-financial) entrusted to them by the shareholders and a responsibility to provide an account of this management. We can therefore see the annual report and the financial statements as a mechanism for discharging accountability but how well the statements succeed in discharging the accountability is another matter write Gray & Co. (2003).

Table two shows a simplified model of accountability introduced by Gray & Co. (1996). This basic version of the model hypothesises a simple two-way relationship between an accountee who might be called the "Principal" and in conventional financial accounting would be the shareholder and accountor who might be called the "Agent" and in conventional financial accounting would be the "Director of the Company". The terms of the flows between the parties and the actions and accountability required will be a function of the relationship which might be thought of as "contract" between the parties. This, in turn, will reflect the social context of that relationship (i.e. the importance that society places on the flow of capital to the company in return for the privileges of limited liability and rights to information) write Gray & Co. (1996).

Table 2: A Generalised Accountability Model

Table/figure two shows simplified accountability model by Gray & Co. (1996). This basic version of the model hypothesises a simple two-way relationship between an accountee (who might be called the "Principal" and in conventional financial accounting would be the shareholder) and accountor (who might be called the "Agent" and in conventional financial accounting would be the "Director of the Company"). The terms of the flows between the parties and the actions and accountability required will be a function of the relationship (which might be thought of as "contract") between the parties.



Christine, Trevor and Morton (2002) suggest that there is a general agreement that public sector accountability is more complex than that which exists in the private sector.[12] Some researchers have also made attempts to identify different types of accountabilities, arguing there is a diversity in the accountability relationships which affects the type of information given by government entities.[13] Sinclair (1995) empirically revealed / identified five forms of accountability[14] in the interviews of 15 Chief Executives of Australian public sector organisations and concludes that accountability is subjectively constructed and changes with context. The five forms are introduced below.

Political accountability means that an officer exercises authority on behalf of elected representatives, who are held accountable to the people i.e. a direct line or chain of accountability links the public servant with the Permanent Head (of an agency, for example), in turn accountable to the minister, to the executive or cabinet, to parliament and hence to the electors write Day and Klein (1987).

Public accountability is understood as a more informal but direct accountability to the public, interested community groups and individuals. Public accountability involves answering, through various mechanisms from newspaper reports to hearings, public concerns about administrative activity write Thynne and Goldring (1987).

Administrative, bureaucratic and *managerial accountability* are sometimes construed as the same thing as all three arise by virtue of a person's location within a hierarchy in which a superior calls to account a subordinate for the performance of delegated duties write Sinclair (1995), but, in particular, managerial accountability is seen to focus on monitoring inputs and outputs or outcomes, while administrative accountability is concerned with monitoring the processes by which inputs are transformed writes Alford (1992).

Professional accountability invokes the sense of duty that one has a member of a professional or expert group, which in turn occupies a privileged and knowledgeable position in society. This is a very subjective concept again, and for one CEO enacting professional accountability means being the top professional in an agency dominated by a particular professional group,

[12] E.g. Parker and Gould (1999), Mulgan (1997), and Sinclair (1995).
[13] See for example; Glynn and Perkins (1997), Sinclair (1995) and Stewart (1984).
[14] Political, public, managerial, professional and personal accountabilities.

for another it means being a professional administrator in the public servant sense, and for another, being a professional manager, writes Sinclair (1995).

Personal accountability is fidelity to personal conscience in basic values such as respect for human dignity and acting in a manner that accepts responsibility for affecting the lives of others, write Harmon and Mayer (1986). It rests on the belief that ultimately accountability is driven by adherence to internalised moral and ethical values. Because it is enforced by psychological, rather than external, controls, personal accountability is regarded as particularly powerful and binding. Personal accountability can also be reinforced by an organisational culture where "the articulation of shared values and beliefs can truly become a way of being" states Denhardt (1991).

The whole accountability concept and the principal – agent relationship lead us to the *Agency Theory* which is relevant to this study where the principal can be assumed as a tax payer and the agent as a public sector organization. Jensen and Smith (2000) narrowly define an agency relationship as a contract in which one or more persons [the principal(s)] engage another person (the agent) to take actions on behalf of the principal(s) which involves the delegation of some decision – making authority to the agent. Eisenhardt (1985, 1989) write that agency theory explains how to best organize relationships in which one party (the principal) determines the work, which another party (the agent) undertakes. The theory argues that that under conditions of incomplete information (information asymmetry) and uncertainty, which characterize most business settings, two agency problems arise: adverse selection and moral hazard. Adverse selection is the condition under which the principal cannot ascertain if the agent accurately represents his ability to do the work for which he is being paid. Moral hazard is the condition under which the principal cannot be sure if the agent has put forth maximal effort. Jensen and Meckling (1976) argue that agency problems emanating from conflicts of interest are general to virtually all cooperative activity among individuals, whether or not they occur in the hierarchical fashion suggested by the principal – agent analogy. Jensen and Meckling (1976) define agency costs as the sum of the out – of – pocket costs of structuring, administering, and enforcing contracts (both formal and informal) plus the residual loss. Enforcement costs include both monitoring and bonding costs, that is, the resources expended by the principal and agent, respectively, to ensure contract enforcement. Thus agency costs include all costs frequently referred to as contracting costs, transaction costs, moral – hazard costs, and information costs. Jensen and Meckling (1976) argue that because more highly

leveraged firms incur more monitoring costs, they seek to reduce these costs by disclosing more information in annual reports.

There are other theories (concerning the disclosure and the information flow, in general) in the accounting literature [besides the accountability and (agency theory)] and the most widely employed of these theories are: Stakeholder Theory[15] and Legitimacy Theory.[16] Both of theories are shortly described in the following paragraphs. Other forces / theories such as: capital market transactions, corporate control contests, stock compensation, litigation, proprietary costs, and management talent signalling which affect managers' disclosure decisions for capital market reasons are excluded from the analysis.[17]

Stakeholder Theory states that a stakeholder is any human agency that can be influenced by, or can itself influence, the activities of the organisation in question. An organisation is likely, therefore, to have many stakeholders write Gray & Co. (1996).[18] These will include groups like; employees, communities, society, the state, customers, but will be extended beyond this to include, for example, suppliers, competitors, local government, stock markets, industry bodies, foreign governments, future generations, non-human life, etc. write Gray & Co. (1996). The first point of view is that, the organisation – stakeholder interplay can be seen as a socially grounded relationship which involves responsibility and accountability. Thus, the organisation owes accountability to all its stakeholders. The nature of that accountability is determined by the relationship(s) of that stakeholder with the organisation. They states that the other point of view, is that, the stakeholder theory may be employed in a strictly organisation – centred way. Here, the stakeholders are identified by the organisation of concern (not by society as they are in the accountability framework), by reference to the extent to which the organisation believes the interplay with each group needs to be managed in order to further the interests of the organisation, to be precise the more important the stakeholder to the organisation, the more effort will be exerted in managing that relationship. Information, whether financial or non-financial, is a major element that can be employed by the organisation to manage or manipulate the stakeholder in order to gain their support and approval, or to distract their opposition and disapproval, write Gray & Co. (1996).

[15] See, for example, Roberts (1992) and Ullmann (1985)
[16] See, for example, Guthrie and Parker (1989a), Lindblom (1994) and Patten (1992).
[17] See, Healy and Palepu (2001), for example.
[18] See also, section's 2.2. Discussion about the stakeholders of Finnish government agencies.

Gray & Co. (1996) write that *Legitimacy Theory,* at its simplest argues that the organisations can only continue to exist if the society in which they are based perceive the organisation to be operating to a value system which is commensurate with the society's own value system. Organisations may face many threats to their legitimacy and Lindblom (1994) argues that an organisation may employ four broad legitimating strategies when / if faced with different legitimation threats (i.e. the strategies are the ones which connect the whole theory to the concept of disclosure level, for example in the annual reports). Thus, in the face of failure of the organisation's performance (e.g. financial scandal, fraud, pollution leak, etc.), the organisation [according to Lindblom (1994)] may: seek to educate its stakeholders about the organisation's intentions to improve that (the failure) performance; seek to change the stakeholders' perceptions of the event (but without changing the organisation's actual performance); distract (i.e. manipulate) attention away from the issue of concern (concentrate on some positive activity not necessarily related to the failure itself); or seek to change external expectations about its performance.

3.2. EMPIRICAL RESEARCH OF DISCLOSURE LEVEL

This section is divided into two sub-sections which are public sector research and private sector research. Even though voluntary disclosure is very vital area of research almost in every aspect but there is still a lack of studies concerning the voluntary disclosure in the public sector. The analysis of previous empirical studies concentrates on the following areas; the background and the sample, the level of disclosure and the content of specific disclosure index and possible associations between the level of disclosure and entity specific characteristics. Each paper is analyzed separately in order of clarity.

3.2.1. Empirical Studies of Disclosure Level in Public Sector Annual Reports

Due to lack of previous academic research in the area of voluntary disclosure in public sector this study discusses shortly only five different research papers in chronological order. Most of the findings are quite same as in private sector studies and the methodologies are the same. It is still worth to discuss about public sector studies concerning the disclosed information in annual reports before any empirical analyses of this study takes place.[19] Each analysis contains three main interests about the respective papers; the first one is about the background

[19] Annual report competitions possibly joined by an agency and organized by a third party won't be analyzed.

and sample; the second one is about level of disclosure and the content of the specific disclosure index; and the third one is about the associations between characteristics of the respective organization and the level of disclosure.

Christine, Trevor and Morton (2002) investigate the voluntary disclosures in the annual reports of the Australian public sector entities. Their research has two objectives, which are: to examine the quality of the disclosures by Queensland local governments and to investigate the factors that may contribute to the quality of disclosures by local governments. Their objectives are quite common in this area of research but also they suffer the lack of previous studies by saying: "Despite the recognition that a quality annual report is necessary to discharge public sector accountability, there have been relatively few empirical studies on the quality of the information disclosures in local government annual reports." The respective paper uses 36 annual reports of Queensland local government councils of Australia and the years included are 1997 to 1999. This paper is using only the annual reports of the largest 36 councils (measured by total revenue) due to the fact that Boyne & Law (1991) suggests that the major constraint on the production of an annual report was "scale" including the low number of staff employed and the lack of financial resources to cover the costs of producing reports. This sample reduction is done because Christine & Co (2002) main objective is to study the quality of reporting and they hypothesize that it is more likely that large councils have resources to commit fully their accountability obligations.

While there are few comprehensive studies of the content of local government annual reports, most studies concentrate on the disclosure of specific items and this is not a conception. This paper uses the so called LGA index (Local Government Accountability) to capture the level of disclosure in annual reports. This so called LGA index has three major sections; Overview; Performance; and Financial Information. The total amount is 22 items. The LGA Index also assigns weights to each of the criteria with a one for low importance, two for medium importance and three for high importance. In terms of the scoring process, two researchers independently analyzed all of the annual reports and scored each criterion in the LGA index on a zero to five scales. The resultant scores of each researcher were then compared, and each instance of disagreement was discussed between the two researchers. All discrepancies were able to be resolved to the satisfaction of both parties through clarification of the criteria. The methods described above are criticized in few other studies but the so called disclosure index method is introduced and analyzed more thoroughly in section 5.4.1.

Christine & Co. (2002) show, that there is a significant positive correlation between the LGA Index (only years 1998 & 1999) and total revenue. Total revenue is used as proxy for size (instead of total assets) in this study due to the fact that Barton (1999) writes that the valuation of assets in the local government sector is still contentious. They report that Dixon et al., (1991) and Coy et al., (1994) found no relationship between the size of an entity (universities in these cases) and the quality of their disclosures. Christine & Co (2002) write that some argue that the higher the quality of report, the more timely the report. The respective study of Christine (2002) found no correlation between the quality of disclosures as measured by the LGA Index scores and the timeliness of the 36 Queensland local governments annual reports for the three years examined. This hypothesis is quite weird because the timeliness of reporting is more like a part of quality not an explanatory variable of quality. Christine (2002) tests whether there is a relationship between the type of council (NCP or not NCP) and the quality of reporting. It appears to be that there is no relationship between reporting under NCP (National Competition Policy) and producing a quality annual report. Christine & Co (2002) also mention another factor that may influence the quality of reporting that has not been examined in prior research which is the sophistication of the accounting system in place.

The original version of the *Eliasson's and Olofsson's (2002)* paper (not academic) is in Swedish but the discussion of this paper is (here) in English. Eliasson & Olofsson (2002) investigate the level of disclosed information in 84 annual reports of Swedish government agencies. The only objective of their study is; why some government agencies are so much better in reporting the results in their annual reports? This paper is one of the most relevant concerning this study due to the several facts which are for example; the reporting environment / structure in Finland is quite the same as in Sweden; few of the explanatory variables are drawn primarily from the respective paper of Eliasson & Olofsson (2002); and institutional, cultural and demographic factors are quite same in Sweden and in Finland. It seems that the results can be comparable.

This paper of Eliasson and Olofsson (2002) is trying to capture the level of disclosed performance information in the annual reports by using the self-made disclosure index which consists 25 items. It seems that their index concentrates more on the quality of the disclosure than the level of disclosure; specifically the index scores the items from one to three scales.

This index construction method is criticized due to the subjectivity in quite many academic papers.[20]

Eliasson and Olofsson (2002) examine if there are any associations between government agency characteristics and the level of disclosure (performance disclosures in this case) in the annual reports of Swedish government agencies. The respective paper tests seven variables hypothesized to affect the quality and level of performance disclosures. The first one is the agency's function i.e. is the agency's mission to produce information or something else; the second one is size of the agency which is measured as total revenue; the third one is the age of the agency i.e. is the agency established before or after 1990; the fourth explanatory variable is the agency's experience in so called program budgeting i.e. does the agency belong to a specific test group; the fifth one is the location of the agency i.e. is the agency located in Stockholm or somewhere else; the sixth explanatory character is the proportion of chargeable operations of the total income; and the seventh variable is the so called ministry variable.[21] Eliasson and Olofsson (2002) report, that only the agency's size and the administrative ministry are significant explanatory variables of the quality of performance disclosures in the Swedish government agencies' annual reports. The respective paper investigates whether the organization structure or processes or routines of the agency could explain the quality of disclosure in annual reports by analyzing the best and the bad reporters more thoroughly.[22]

Banks, Fisher & Nelson (1997) examine the quantity and quality of information disclosed in the annual reports and financial statements of universities in England, Wales and Northern Ireland (EWNI) over the 1992 to 1994 period. The results are compared to similar studies in New Zealand and Ontario Canada.[23] Basically this paper is more interested in the level and quality of disclosed information than possible associations between agency characteristics and the level and quality of disclosure. There were 53 reports from 1992, 59 from 1993 and 73 reports from 1994 to fulfill this study. All the methods, etc. were from the previous studies concerning the level & quality of disclosed information in annual reports.

The level and quality of disclosed information in annual reports is tried to capture with the so-called Modified Accountability Index (MAD) introduced by Coy et al., (1993a, 1993b). The

[20] See, section 5.4.1. for example.
[21] I.e. which Ministry administrate the specific agency?
[22] See, Eliasson and Olofsson (2002).
[23] See below; Banks and Nelson (1994).

items chosen by Coy et al., (1993a, 1993b) for MAD Index were determined primarily through a review of the accountability literature for universities and through an analysis of current annual reports. The MAD Index groups the 26 six items into four categories; Overview; Service Performance; Financial Performance; and Physical & Financial Condition. Banks & Co (1997) write that even though the MAD Index was originally developed to evaluate university disclosures in New Zealand, many of the items included in the index are recommended by research articles in the US, UK and Canada.[24] In this study, each annual report is examined and the items included in the MAD Index are scored. If the item is absent then it receives a score of zero and if present, a score of one. If the item is present, it is further scored on an ordinal scale based upon the perceived quality of the disclosures with scores ranging (again) from one, poor, to five, excellent. In this study three accounting faculty members independently analyzed and scored the disclosures from the materials submitted. The differences were identified and discussed during an arbitration process in order that a mutually acceptable score is achieved. Also in this paper subjective weights from one to three are developed for each item. The main founding concerning the level and quality of disclosed information in the annual reports & financial statements of EWNI universities were as follows; the first finding is that there has not been a statistically significant change in the quantity or quality of disclosure between the years 1992 to 1994. The second finding is that the established universities tended to have better quality disclosure than new universities.[25] The third finding is that the universities in EWNI were below the quantity and quality disclosure levels of the universities in New Zealand but above universities in Ontario.

The paper of *Boyne and Law (1991)* evaluates the information provided to the public in the annual reports published by Welsh District Councils in England with an assumption that an annual report is the only comprehensive statement of stewardship available to the public. This paper concentrates only to performance information that might be presented in local authority annual reports. The sample consists 165 reports published by 37 welsh Districts between years 1981 and 1998 which means that it represents the 66 per cent of the whole population of annual reports.

The level of performance information in the annual reports is tried to capture by using self-made disclosure index consisting 20 items measuring the level of performance reporting.

[24] See; Engstrom (1988), KPMG (1995), Broadhurst (1993), Gray and Haslam (1990) and CVCP (1989).
[25] I.e. former polytechnics.

Boyne and Law found out that some districts produce better reports than others and the quality of annual reports were little better at the end of 1980s than at the start but in general, they are reporting that the annual reports on performance produced by Welsh District Councils are poor quality.

They try to identify the factors why some districts produce better reports than others? After the interviews with council staff and chief executives Boyne and Law (1991) find out that there can be several constraints on the production of annual reports. In order to investigate the validity of these ideas collected through interviews, they develop and test a statistical model of variations in the content of the annual reports. Five explanatory variables were tested; the total number of council staff (scale); the ratio of actual expenditure to grant related expenditure (slack); the level of central grants and the value of the local tax base (financial resources); and whether a council is controlled by Labor or the Conservatives rather than being hung or dominated by independents (politicians). Only this last variable is statistically significant at the five per cent level with the expected positive sign. This paper is relevant to introduce due to the fact that this paper is using same kind of variables to examine the associations between the characteristics and the level of disclosure.

The last paper about the disclosures in the annual reports of public sector entities is by *Robbins and Austin (1986)*. This paper divides the disclosure into two components which are; the importance of information and the extent of disclosure. The purpose of this study is not very relevant concerning this thesis due to the fact that this paper examines only the level / extent of disclosed information, not importance or quality. But however, the objective is to find out whether there is an association between a compound index, which captures both the importance of information and the extent of disclosure, and possible determinants of disclosure which is then compared with the use of a simple disclosure index (that is only extent). The result is that the independent variables which were significantly associated with the simple index (only extent of disclosure) of disclosure quality were significantly associated with the compound index (both extent and importance). The sample of Robbins and Austin (1986) paper consists 99 out of 200 annual reports 1981 of the US cities with populations exceeding 50 000.

In this paper of Robbins and Austin (1986) the level of disclosed information in the annual reports of governmental units is analyzed by using the self-made disclosure index with

weights (i.e. importance) based on a questionnaire to municipal bond analysts. The initial list of 27 information items deemed useful by municipal bond analysts was compiled from a review of the governmental accounting and finance literature. It seems that this kind of questionnaire is the only proper way to give any weights for an item in the disclosure index. Robbins and Austin (1986) don't analyze the levels of disclosed information of those 99 US cities.

Robbins and Austin (1986) also analyzed the possible associations between the characteristics of governmental units and the level of disclosed information based on the Ingram (1984) findings. The following determinants were analyzed; Per Capita Income, City Government Form (i.e. Mayoral vs. Manager / Council), Long-Term Debt per Capita, Intergovernmental Revenue / Total Revenue, Own Revenue per Capita, Size of Audit Firm and Population. With 99 observations Robbins and Austin (1986) found out that correlations of City Government Form, Long-Term Debt per Capita, Intergovernmental Revenue / Total Revenue and Size of Audit Firm variables and the disclosure quality index scores were significant at < 0,05 level. The P-values of respective determinants were not statistically significant in the regression model used.

3.2.2. Empirical Studies of Disclosure Level in Private Sector Annual Reports

It seems that voluntary disclosure and disclosure in general is one of the most vital research areas in financial accounting and finance and due to that fact several high quality studies are discussed in this section. The following four studies in chronological order concerning the voluntary disclosure in private sector are analyzed in quite great detail. Again the three interests relevant for this study are above others; the background and sample used in the paper; the level of disclosed information & the content of possible disclosure index; and the possible analyzes about the associations between corporate characteristics and the level of disclosed information. But because many of the following papers investigates the corporate communication with the market more than relation between corporate characteristics and disclosure level, this study shortly report the results of the following four studies and all relevant founding concerning this thesis. Market's reaction to, for example, increased disclosure is of course very important area of research and even though this thesis is studying the voluntary public sector disclosure in annual reports it is still relevant to discuss the latest studies concerning the private sector disclosure and interaction with market.

The paper of Ole-Kristian Hope (2003) investigates the relations between the accuracy of analysts' earnings forecasts and the level of annual report disclosure, and between forecast accuracy and the degree of enforcement accounting. This paper uses the annual reports of 890 companies from 22 countries from years 1991 and 1993 and the mean of disclosure scores is 74, 7 out of 100. Ole-Kristian Hope (2003) documents that firm-level annual report disclosure is positively associated with forecast accuracy, which suggests that firm-level disclosures provide useful information to analysts. He reports that prior international evidence on the relation between the disclosures and forecast accuracy is inconclusive. He documents that annual report disclosures are more positively related to forecast accuracy when a firm is followed by few analysts, consistent with his hypothesis that the annual report constitutes a relatively larger part of a firm's overall communication process when analyst following is low.

Ole-Kristian Hope (2003) uses the Center for International Financial Analysis and Research CIFAR (1993, 1995) evaluations of corporate disclosure levels for leading no financial companies in several countries and it seems that CIFAR Index is very high quality product which is worth to introduce because one of the main analyses of this study uses the Disclosure Index Method to measure the level of disclosed information in the annual reports of Finnish Government Agencies. CIFAR conducted evaluations of corporate annual report disclosures in the first half of the 1990s. Firms from 42 countries are included in their 1993 and 1995 evaluations, covering fiscal years 1991 and 1993, respectively. CIFAR studied annual reports of about 1000 industrial companies for both years, for a total of 1992 observations. Eighty-five annual report variables were used to construct the overall annual report score and a given company was not penalized for not disclosing any applicable items. Data for all the variables were extracted directly from annual reports. This paper really gives new evidence about the positive association between disclosures and forecast accuracy in international context.

Pope (2003) discusses about the hope (2003) study above and the main comments which are relevant for this thesis are shortly summarized in this paragraph. Pope (2003) writes, that in common with most other disclosure studies, the disclosure index captures variation in disclosure levels (or volume). The resulting index is a measure of the "size" of annual report disclosures, one dimension determining the "richness" of the information environment within earnings forecasts is generated. To be precise, it does not provide a direct measure of the "quality" or relevance of disclosures for informing forecast of earnings. Pope (2003) writes

that Hope (2003) is well aware of this issue and he is careful to avoid use of the term "disclosure quality".

Ahmed and Courtis (1999) paper is maybe the most important concerning the first and third research problems (Factors Affecting to the Likelihood of Publishing an Annual Report and Associations between Agency Characteristics & Level of Disclosed Information in the Annual Reports). Ahmed and Courtis (1999) paper, a meta-analysis[26] of 29 studies between 1968 and 1997[27] confirms significant and positive relationships between disclosure levels (i.e. scores from disclosure index) and corporate size, listing status and leverage. Ahmed & Courtis (1999) document that amount of items in the disclosure indices varies from 11 to 224. In other words, this paper combines quite notable amount of 29 previous studies about the association between corporate characteristics and the level of disclosure in the annual reports.

Depending on the research objectives, several corporate attributes have been examined in annual report disclosure studies. The most frequent of these characteristics have been corporate size, listing status (not applicable for public sector), capital structure (leverage), profitability (not totally applicable for public sector) and size of reporting entity's audit firm (not applicable in this case due to the fact that State Audit Office is the auditor of all Finnish Government Agencies). Corporate size, as measured by total book value of assets, total market value of the firm, total revenue, or total number of shareholders, has persistently been found to be significantly and positively associated with disclosure levels in several studies, suggesting that larger companies follow better disclosure practices in developed countries document Ahmed and Courtis (1999). A positive association between leverage, as measured by book value of debt to shareholders' equity of book value of debt to total assets, and disclosure level has been hypothesized.[28] Jensen and Meckling (1976) argue that because more highly leveraged firms incur more monitoring costs, they seek to reduce these costs by disclosing more information in annual reports. However, the empirical evidence relating to this hypothesis is inconclusive document Ahmed and Courtis (1999).

As a conclusion Ahmed and Courtis (1999) write that the analysis they have presented in their paper provides strong support for the political and agency cost arguments that larger

[26] Glass, (1976, p. 3) defines meta-analysis as the analysis of analyses, the statistical analysis of a large collection of results from individual studies, for the purpose of cumulating and integrating the findings.
[27] Studies which assessed municipal disclosure or not-for-profit sector were excluded.
[28] See, Myers (1977), Schipper (1981) Chow and Wong-Boren (1987), Wallace et al. (1994).

corporations are more likely to disclose more information to users of annual reports. They also write that there is evidence that small firms try to improve their disclosure standards in order to compete for annual report awards of excellence which are sponsored by financial executive and accountancy professional bodies in many countries. Courtis (1996) writes that is such cases, the annual reports of large firms may be used as a role models. Small firms would appreciate that information disclosed should be useful since redundant information reduces its marginal utility.

Meek, Roberts and Gray (1995) study examines factors influencing the voluntary disclosures of three types of information (strategic, non – financial and financial) contained in the annual reports of multinational companies (MNCs) from the U.S., U.K. and Continental Europe. Meek and Co. (1995) use 226 annual reports from the respective regions above and the disclosure index they are using consists 85 items divided into four sections. This paper's main interest is not again the level of disclosed information in the annual reports but the possible associations between the characteristics and the level of disclosed information.

Meek and Co. (1995) use four explanatory variables relevant for this study. The first variable they test is size (significant explanatory variable) which is a very common variable reported as significant in studies examining differences across firms in their disclosure levels. But as Meek and Co. (1995) states, "unfortunately, it is unclear what size proxies". However, larger firms may have lower information production costs, for example, hypothesizes Meek and Co. (1995). Again, according to agency theory large firms have higher agency costs [Jensen and Meckling (1976)] and they are also more sensitive to political costs [Watts and Zimmerman (1981)]. Meek and Co. (1995) also test country and region of origin variables due to the fact that national and regional variations in financial reporting are well documented.[29] The respective variable was significant. They hypothesize that political costs are also likely to vary across nations, given that reflect cultural and social norms. The third variable is industry which is based on Verrecchia (1983) findings that political costs vary also across industries. For example, because of the nature of their products, research and development, chemical companies are likely to be more sensitive about disclosures to competitors and the public than companies in certain other industries. However, it is quite insignificant variable. The fourth explanatory variable is leverage in order to test agency theory (agency costs). Leverage is statistically significant at the 3% level but the sign is wrong. Agency theory predicts that more

highly leveraged firms disclose more information, whereas Meek and Co. (1995) report that lower levered firms do. They hypothesize that the size phenomenon in general may be related to the costs of information production, or political costs rather than agency costs.

3.3. SUMMARY OF LITERATURE AND PREVIOUS RESEARCH

It seems that we don't know very much about the public sector reporting especially in Finland so the research remains to be done. For example, according to the literature review above we do not know, why do some agencies publish an annual report and others do not, what is the current disclosure level in those annual reports and what could explain the possible differences between the disclosure levels of the agencies In addition, private sector studies concerning the determinants of the voluntary disclosure and the relationship between disclosure level and cost of capital are very vital areas of research in accounting and finance. Basis and goals of reporting practices in public and private sector are different but still it seems that the theories originally developed for private sector could offer a theoretical framework also for public sector studies.

Background and sample of the studies varies a lot. All the respective papers introduce above use annual reports as a proxy for the disclosure level but the total number of the sample of annual reports varies a lot that is from 36 to 890 to be more specific. Level of disclosure and the contents of disclosure indices also differ a lot. Most researchers create new indices or just adapt and tailor existing ones to meet their own perceived needs. For example, the number of different items in the indices discussed above varies from 20 to 224.

Possible associations between characteristics and the level of disclosure in annual reports are analyzed almost in every paper discussed above. These determinants of disclosure level are also all papers' main interest. The following variables' relationship with the level of disclosure either in public or private sector is tested; size, Listing Status, Leverage, Ministry, Location, Industry, Amount of Chargeable Operations, audit Firm Size, Per Capita Income, City Government Form, Long-Term Debt per Capita, Intergovernmental Revenue / Total Revenue, Own Revenue per Capita, Size of Audit Firm, Population, council staff (scale); the ratio of actual expenditure to grant related expenditure, the level of central grants and the value of the local tax base, whether a council is controlled by Labor or the Conservatives

[29] See, Meek and Saudagaran (1990) for example.

rather than being hung or dominated by independents, agency's function, age of the agency agency's experience. Few of the variables are relevant also for this study and those are introduced in chapter five.

4. DEVELOPMENT OF HYPOTHESES

In this section all the hypotheses this study is testing are introduced. Almost all the hypotheses based in the previous studies both public & private sector which were discussed in section 3.3. This thesis didn't find any previous studies concerning the likelihood of publishing an annual report, which is also reported earlier in the chapter three, survey of literature. Due to the lack of previous research this thesis uses the same explanatory variables i.e. characteristics of agencies as in previous studies concerning the level & quality of voluntary disclosed information. None of the previous papers analyzed in chapter three make any hypotheses concerning the disclosure level in the annual reports and this study is no conception in that manner. This thesis also tests few hypotheses, which are not previously tested but are worth to test due to the easy access to the data needed. The development process of respective hypotheses is also reported before every hypothesis and the variables used to test the hypotheses are introduced thoroughly in the next chapter.

Eliasson & Olofsson (2002) use the proportion of chargeable operations of the total income as a determinant of the disclosure level and find it as an insignificant one. Meklin (2002) classifies the agencies in five different groups; one for example is based on the amount of chargeable operations / services the specific agency has. The following hypothesis rests on foundations above.

H1: Competition. The more an agency does business with its stakeholders (& others), the more it will face competition, the more likely it will publish an annual report and the more it will disclose information about itself.

Ahmed and Courtis (1999) write that the analysis they have presented in their paper provides strong support for the political and agency cost arguments that larger corporations are more likely to disclose more information to users of annual reports whereas Meek and Co. (1995) hypothesize that the size phenomenon may related to costs of information production, or

political costs rather than agency costs. However, due to these facts the following very common hypothesis in previous papers takes place.

H2: Size. Large agencies are more likely to publish an annual report and voluntary disclose more information in the annual report.

Jensen and Meckling (1976) argue that because more highly leveraged firms incur more monitoring costs, they seek to reduce these costs by disclosing more information in annual reports. The empirical evidence relating to this hypothesis is inconclusive document Ahmed and Courtis (1999) but still the following very general hypothesis in previous studies is worth to test.

H3: Leverage. Leveraged agencies are more likely to publish an annual report and voluntarily disclose more information in the annual report.

Verrecchia (1983) find out that political costs vary also across industries and Eliasson & Olofsson (2002) use ministry as a determinant of disclosure level. Based on these findings the following hypothesis is relevant.

H4: Ministry. Agencies under management of certain ministries are more likely to publish an annual report and voluntary disclose more information in the annual report.

Meek and Co. (1995) also test country and region of origin variables due to the fact that national and regional variations in financial reporting are well documented. They hypothesize that political costs are also likely to vary across nations, given that reflect cultural and social norms. Eliasson & Olofsson (2002) use the location of the government agency as an explanatory variable. These thoughts above give a reason to test also the following hypothesis.

H5: Location. Agencies located in Helsinki - Vantaa - Espoo metropolitan area are more likely to publish an annual report and voluntary disclose more information in the annual report.

Meek and Co. (1995) mention costs of information production and Christine and Co. (1999) notice sophistication of the accounting system in place, as possible determinants of disclosure level in annual reports. Leppiniemi and Virtanen (2003, pp.82) state that, "the more automatic the production of the annual report is, the better is the final outcome or at least easier." They notice that, it is relevant the possible outside partners in the annual report production process have such equipments which enable to move files such as text, tables, etc. electronically during the annual report production process. According to Leppiniemi and Virtanen (2003) all the high quality graphical service providers are at almost the same level in the technical matter but there can be more problems with the respective companies own internal systems i.e. in what kind of form the communications department receives all the information such as, tables, figures, etc. in order to produce an annual report, for example. Based on the thoughts above the following not previously tested hypothesis is settled.

H6: Internal Systems. The number of different accounting systems increase, the amount of different system providers and outsourcing of system management increase the likelihood of publishing an annual report and the level of voluntary disclosed information in the annual report.

The State Audit Office go through the following areas of Finnish government agencies every year; agency's management, internal control, accounting, financial statement and budget's realization and if there are something wrong, the agency should take actions in that matter. Based on this audit process, the following not previously tested hypothesis takes place.

H7: Audit Report. If the agency is ordered by the State Audit Office to take actions concerning its accounting procedures, etc., the more likely it won't publish an annual report and the more likely the level of voluntary disclosed information is low.

5. EMPIRICAL ANALYSES

Chapter five, Empirical Analyses includes, of course, all the analyses of the thesis. It is divided into six different sections which are; Description of Sample Selection which shows all the data sources, sample selection process, etc.; Introduction of Explanatory Variables which shows all the determinants hypothesized to affect the likelihood of publishing an annual report and the level of disclosure; Likelihood of Publishing an Annual Report which analyses

the first objective of this thesis; Level of Disclosure in Public Sector Annual Reports which examines the contents of the annual reports i.e. the second objective; Association Between Characteristics & Disclosure Level which investigates the possible reasons for the differences in the level of disclosure between the agencies; and Summary and Results of Empirical Analyses which summarizes the empirical analyses and discuss about the results.

5.1. DESCRIPTION OF SAMPLE SELECTION

This section describes the sample selection process and shows the different sources of data. The more comprehensive introduction of the variables is in the following sections like the 5.2. However, there are four different sources of data this study uses. Each of those sources is described shortly in the following four paragraphs. Table three at the end of the section summarizes shortly all the sources and the respective variables. Table 13 show all the Finnish government agencies and ministries.

NETRA, the Finnish State Internet Reporting. NETRA is a new service provided by the State Treasury to openly report the performance information and expenditures of the Finnish state. In the first phase you have access to monthly information in the state central bookkeeping system, as well as to a collection of official documents concerning economic and operational planning and follow-up. You are also offered some other key information about the Finnish state, i.e. its budget. NETRA is a Finnish service to the Finnish citizens, state administration and media. Unfortunately almost none of the reporting information included is available in English. All the bookkeeping variables of The 117 agencies are downloaded from NETRA.[30]

Annual Reports. Early September 2003 an email was send to all the 117 contact persons of Finnish Government agencies and the respective persons in the agencies were asked to send a copy of their annual report from the year 2002 if they published one. Almost all the agencies responded and send the annual report if they published one. Both electronic and paperless forms were accepted. Late March 2004 a confirmation email was send to all the 47 agencies which didn't publish an annual report and they were asked to verify that the absence of annual report is correct information. Table 13 shows all the Finnish government agencies. The final sample includes all the 70 published annual reports of the year 2002. Annual reports are this study's main source of information.

[30] See, Valtiokonttori (2003).

Previous Studies. This thesis uses data from the State Treasury's report (Valtiokonttori 2002) about the Accounting Systems, HR Systems, Sub ledgers and Money Transferring Systems in Government Agencies of Finland from the year 2002. The survey is only for State Treasury's internal use but due to the fact that I work there I could access the information. All the internal systems variables are derived from this survey made by State Treasury of Finland.

Audit Reports. This thesis uses also information from the audit reports as explanatory variable. All the respective audit reports are downloaded from the WebPages of the state audit office and the variable is introduced more thoroughly in the next section.

Table 3: Description of Data Sources

Table three summarizes all the different data sources of this study. The more detailed information about variables can be found from the main body of the text. Data source column shows the four (4) different sources of information, Description column shortly describes the data source and Variables column lists all the variables from the respective source.

Data Source	Description	Variables
NETRA	NETRA - the Finnish State Internet Reporting. NETRA is a new service provided by the State Treasury to openly report the performance information and expenditures of the Finnish state. In the first phase you have access to monthly information in the state central bookkeeping system, as well as to a collection of official documents concerning economic and operational planning and follow-up. You are also offered some other key information about the Finnish state, e.g. its budget. NETRA is a Finnish service to the Finnish citizens, state administration and media. Since almost none of the reporting information included is available in English, we will not provide an English interface either. But you are always welcome to use the Finnish service.	All the book - keeping variables are from NETRA (BUSINC, LNLIABS and DEBT).
Annual Reports	Total of 70 annual reports of Finnish Government Agencies from year 2002. The sample concist all the annual reports from the respective year. Approximately 10 reports are in electronic form and the rest are in paper form. Government agencies were asked to send the reports to the author.	All the items (26) in the disclosure index are from the annual reports.
Previous Studies	The State Treasury's Report about the Accounting Systems, HR Systems, Subledgers and Money Transfering Systems in Government Agencies of Finland. Valtiokonttori. 2002. Talous -ja henkilöstöhallintojärjestelmät, maksuliikejärjestelmät ja osakirjanpidot tilivirastoissa: Selvitys tilivirastojen taloushallintojärjestelmistä. 17.06.2002.	All the accounting - and HR systems related variables are from this specific prevous study by State Treasury of Finland (LOCATION, SUBLEDGR, SYSPROV and SYSMGMT).
Audit Reports	112 audit reports of Finnish Government Agencies from year 2002. The sample concist almost all audit reports from the respective year. All audit reports are downloadable on the webpages of State Audit Office.	The audit process related variable is from audit reports (AUACTIO).

Total Number of Variables from NETRA	3
Total Number of Variables from Annual Reports	26
Total Number of Variables from Audit Reports	1
Total Number of Variables from Previous Studies	4

5.2. INTRODUCTION OF EXPLANATORY VARIABLES

Next the variables that are hypothesized to be good proxies to test the hypotheses are introduced. The respective hypotheses are also repeated to make it easier for potential readers to make possible judgements about the proxies. Table four, at the end of this section shows the descriptive statistics of the variables and some analysis.

H1: Competition. The more an agency does business with its stakeholders (& others), the more it will face competition, the more likely it will publish an annual report and the more it will disclose information about itself. The first hypothesis is tested by using the variable called BUSINC (Business Income) as a proxy for the level of competition. BUSINC[31] is a sum of all the income from market prized actions, which is divided, by total income. In other words the variable above is just an income account that consist all the income from the market prized actions with following stakeholders of the specific agency: municipalities, households, business life, European Union, Government Agencies and Others.

H2: Size. Large agencies are more likely to publish an annual report and voluntarily disclose more information in the annual report. The second hypothesis is tested by using the variable called LNLIABS (Natural Logarithm of Total Liabilities) as a proxy for the size of the agency. LNLIABS (Vastattavaa) is just a natural logarithm of the total liabilities of the respective agency. Total assets and total liabilities are very common proxies for size in previous studies introduced in chapter three even there are problems in valuation of assets.

H3: Leverage. Leveraged agencies are more likely to publish an annual report and voluntary disclose more information in the annual report. The third hypothesis is tested by using the variable called DEBT (Total Debt in the Balance Sheet) as a proxy for the leverage of the agency. DEBT (Vieras pääoma) is just a sum of all the debt of the agency, which is divided by total assets. The debt is of course divided into short term debt and long term debt which won't be separate variables due to the fact that only eight agencies had long term debt at the end of the year 2002 which means that almost all the debt is short term like account payables, etc.

H4: Ministry. Agencies under management of certain ministries are more likely to publish an annual report and voluntary disclose more information in the annual report. The fourth hypothesis is tested by using the following dummy variables which receives value one if the agency is under one of the following ministry's management and otherwise zero.[32] PARLIAMN is the Parliament of Finland, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the

[31] In Finnish, Tuotot maksuperustelain mukaisista liiketaloudellisista suoritteista.
[32] This paper does not divide the sample of agencies according to Meklin (2003)'s classification and use that as an explanatory variable due to the fact that, for example only one agency seems to provide only free of charge services. The grouping process of agencies would be also too much researcher dependent e.g. the problem of subjectivity.

Ministry of Agriculture & Forestry, JUSTICE is the Ministry of Justice Finland, EDUCAT is the Ministry of Education, DEFENCE is the Ministry of Defence of Finland, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, PRESIDEN is the President of the Republic of Finland, LABOUR is the Ministry of Labour, FOREIGN is the Ministry for Foreign Affairs, PRIMEOFF is the Prime Minister's Office, FINANCE is the Ministry of Finance, ENVIRON is the Finnish Ministry of the Environment

H5: Location. Agencies located in Helsinki - Vantaa - Espoo metropolitan area are more likely to publish an annual report and voluntary disclose more information in the annual report. The fifth hypothesis is tested by using the variable called LOCATION which is the Physical Location of the Agency as a proxy for the location of the agency. LOCATION is a dichotomous variable which receives value one if the agency is located in the Helsinki – Vantaa – Espoo metropolitan area and otherwise zero.

H6: Internal Systems. The number of different accounting systems increase, the amount of different system providers and outsourcing of system management increase the likelihood of publishing an annual report and the level of voluntary disclosed information in the annual report. The sixth hypothesis (which is quite a combination) is tested by using the following three different variables. SUBLEDGR (Sub Ledgers) is just a total amount of different sub ledgers[33] in the agency. SYSPROV[34] (System Providers) is just a total amount of different system (Accounting, Human Resources, Sub Ledgers) providers of the specific agency and SYSMGMT[35] (System, Sub Ledgers Management) is a dichotomous variable that receives value one if more than half of the agency's systems are managed by third party like service centre and otherwise zero.

H7: Audit Report. If the agency is ordered by the State Audit Office to take actions concerning its accounting procedures, etc., the more likely it won't publish an annual report and the more likely the level of voluntary disclosed information is low. The seventh hypothesis is tested by using the variable called AUACTIO (Actions to be taken) as a proxy for quality of agency's accounting procedures, internal control, etc. AUACTIO receives value one if the agency is ordered by the State Audit Office's audit report to take actions[36]

[33] Sub ledger is defined as a system that produces information for the main bookkeeping system, for example account receivables or account payables. In Valtiokonttori (2002)'s report: Osakirjanpitojärjestelmän nimi.
[34] In Valtiokonttori (2002)'s report: Järjestelmän (osakirjanpito) toimittajan/ylläpitäjän nimi.
[35] In Valtiokonttori (2002)'s report: Järjestelmän (osakirjanpito) hallinnoija eli järjestelmää hallinnoiva organisaatio.
[36] In Finnish, Ilmoitusvelvollisuus Valtiontalouden Tarkastusvirastolle, 5 pykälä, 1 momentti.

concerning, for example the following five areas of interest; agency's management, internal control, accounting, financial statement and budget's realization and otherwise zeros.[37]

Before any correlation analyses and regression analyses all the cases with absolute standardized residual values greater than three standard deviations were excluded from the sample. In other words, the normality of the variables' residuals was tested. There were no outliers. The levene's test for the equality of variances was also done. If the significance value for the levene's test is high i.e. typically greater than 0, 05 then the results that assume equal variances for both groups should be used in when testing the significance of the differences in the means of the two groups' explanatory variables.[38] In this case, the DEBT variable received value under 0, 05 which means that its variance is assumed not to be equal in the two groups. It is also relevant to test the means and medians of the two groups by using the t-test and Mann – Whitney test because Hosmer and Lemeshow (1989) recommended a p-value (Sig.) cutoff to 0,25 to determine whether a variable should be included in a logistic regression model. Mann-Whitney test is done because the DEBT variable's skewness values are far a way from [1] which means that they aren't normally distributed and t-test assumes that they should be. Both the parametric t-test and non-parametric Mann-Whitney test however, give quite same kind of results. For the categorical variables (0/1 variables), the CHI-Square-statistic is used to test a significance of the difference between the group which publish an annual report and the one which do not.[39] Table four show also the means and standard deviations of the explanatory variables.

The following explanatory ministry variables; PARLIAMN, PRESIDEN, LABOUR, FOREIGN and PRIMEOFF are excluded from all the following analyses[40] because they don't manage any agencies which publish the annual report (see table four). Ministry variables such as JUSTICE, DEFENCE and ENVIRON are excluded due to the fact that each of those manage only one agency which does publish the annual report. These actions are done because the variables above don't have enough explanatory power to be included in the analyses. After these actions, the total amount of ministries in the following analyses is reduced from 15 to 7 but the number of agencies remains the same.

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[37] See, Valtiontalouden Tarkastusvirasto 2003.
[38] I.e. t-test to compare the means of the two groups.
[39] For, example. Under management of Ministry of Trade and Industry 20 agencies publish an annual report and 8 do not. The CHI-square test was done to test these two groups expected frequencies of annual report publishing.
[40] I.e. binary logistic regression analyses, correlation analyses and multivariate regression analyses.

Table 4: Descriptive Statistics of Explanatory Variables

The category Total (117) is the total size of the sample. There are also the Mean values of each Variables (xx) and standard deviations Std. T-tests are made to test whether the means of the variables are equal and in this case also the Levene's test for equality of variances of the variables is done with SPSS due to the fact that there is different way to calculate t-statistic for both of those cases (equal variances assumed and equal variances not assumes). Few variables' medians are tested with Mann-Whitney due to the fact that their Skewness ratios are more than one [1] i.e. the variable is not normally distributed. Significance level of t-test and Mann-Whitney is 95%. The significance of differences between the two groups' categorical variables is tested with the CHI-square test. BUSINC is a sum of all the income from market prized actions which is divided by total income, LNLIABS is a natural logarithm of the liabilities of the respective agency, DEBT is a sum of all the debt of the respective agency which is divided by total assets, PARLIAMN is the Parliament of Finland, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the Ministry of Agriculture & Forestry, JUSTICE is the Ministry of Justice Finland, EDUCAT is the Ministry of Education, DEFENCE is the Ministry of Defense of Finland, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, PRESIDEN is the President of the Republic of Finland, LABOUR is the Ministry of Labor, FOREIGN is the Ministry for Foreign Affairs, PRIMEOFF is the Prime Minister's Office, FINANCE is the Ministry of Finance, ENVIRON is the Finnish Ministry of the Environment, LOCATION is a dummy variable which receives value one (1) if the agency is located in Helsinki-Espoo-Vantaa metropolitan area & otherwise Zero (0), SUBLEDGER is just a total amount of different sub ledgers in the agency, SYSPROV is just a total amount of different system (accounting & human resources) providers of the specific agency, SYSMGMT is a dummy variable which receives value one (1) if all or more than half of the agency's systems (accounting & HR) are managed by a third party (e.g. service center) & otherwise zero (0), the last explanatory variable AUACTIO receives value one (1) if the agency is ordered by the State Audit Office (in the audit report) to take actions concerning its internal control, financial statement, cost accounting, etc., & otherwise zero (0).

		Publish / Not												
		total			Publish			Not			t-test / CHI-Square		Mann Whitney	
		117			70			47						
Variables	N	mean/Sum	std.	Skew.	mean/Sum	std.	Skew.	mean/Sum	std.	Skew.	t-value	Sig	Z	Asymp.Sig.
H1: Competition														
BUSINC	117	0,2732	0,2614	0,6997	0,3263	0,2695	0,3874	0,1941	0,2295	1,3257	2,7572	**0,0068**	-2,6105	**0,0090**
H2: Size														
LNLIABS	117	16,0610	2,6890	0,5533	15,8589	2,5487	0,5634	16,3619	2,8871	0,4964	-0,9920	0,3233	-0,7784	0,4364
H3: Leverage														
DEBT	117	2,6502	4,2695	2,2398	3,0765	5,0202	1,9427	2,0152	2,7342	2,0419	1,4731	0,1436	-0,4281	0,6686
H4: Ministry														
PARLIAMN	117	2	-	-	0	-	-	2	-	-	-	-	-	-
TRADE	117	28	-	-	20	-	-	8	-	-	5,1429	**0,0233**	-	-
TRANSCOM	117	8	-	-	7	-	-	1	-	-	4,5000	**0,0339**	-	-
AGRIFOR	117	9	-	-	6	-	-	3	-	-	1,0000	0,3173	-	-
JUSTICE	117	2	-	-	1	-	-	1	-	-	0,0000	1,0000	-	-
EDUCAT	117	27	-	-	20	-	-	7	-	-	6,2593	**0,0124**	-	-
DEFENCE	117	3	-	-	1	-	-	2	-	-	0,3333	0,5637	-	-
INTERIOR	117	18	-	-	7	-	-	11	-	-	0,8889	0,3458	-	-
SOCIAL	117	7	-	-	2	-	-	5	-	-	1,2857	0,2568	-	-
PRESIDEN	117	1	-	-	0	-	-	1	-	-	-	-	-	-
LABOUR	117	1	-	-	0	-	-	1	-	-	-	-	-	-
FOREIGN	117	1	-	-	0	-	-	1	-	-	-	-	-	-
PRIMEOFF	117	1	-	-	0	-	-	1	-	-	-	-	-	-
FINANCE	117	6	-	-	5	-	-	1	-	-	2,6667	0,1025	-	-
ENVIRON	117	3	-	-	1	-	-	2	-	-	0,3333	0,5637	-	-
H5: Location														
LOCATION	85	64	-	-	37	-	-	27	-	-	1,5625	0,2113	-	-
H6: Internal Systems														
SUBLEDGR	106	4,8302	1,8997	0,7922	5,0984	2,1190	0,7796	4,4667	1,5015	0,1514	1,7075	**0,0907**	-1,2280	-3,2970
SYSPROV	106	3,6038	1,3215	1,0707	3,9180	1,3940	0,9905	3,1778	1,0931	1,0507	2,9536	**0,0039**	0,2194	**0,0010**
SYSMGMT	104	83	-	-	53	-	-	30	-	-	6,3735	**0,0116**	-	-
H7: Audit Report														
AUACTIO	112	56	-	-	34	-	-	22	-	-	2,5714	0,1088	-	-

Total Number of Observations	117
Total Number of Agencies Not Publishing an Annual Report	70
Total Number of Agencies Publishing an Annual Report	47

5.3. LIKELIHOOD OF PUBLISHING AN ANNUAL REPORT

As mentioned earlier no previous studies concerning the likelihood of publishing an annual report were analyzed in chapter three. However, the variables hypothesized to affect the likelihood of publishing an annual report are hypothesized to be same as variables hypothesized to affect the level of disclosed information in the annual reports. All the methods used in this section are common in all areas of research in Finance and Accounting

and the analyses are divided into two sub sections; Correlation analyses and Binary Logistic Regression Analyses, all with the respective content.

5.3.1. Correlation Analyses between the Publish Variable and Explanatory Variables

Because the nature of logistic regression,[41] its worth to know that a logistic coefficient may be found to be a significant when the corresponding correlation is found to be not significant, and vice versa. To make certain global statements about the significance of an independent variable, both the correlation and the coefficient of independent variable in logistic regression (logit) should be significant. Table five shows the correlations between the (0/1) PUBLISH variable and the explanatory variables hypothesized to affect the likelihood of publishing an annual report. Even Gregoire and Driver (1987) have shown empirically that using parametric tests on ordinal data does not lead to great problems, the non – parametric Spearman's correlation in the lower diagonal is supposed to be more informative because it does not assume the normality of the variables. However, the results support each other. SUBLEDGR is excluded from the following binary logistic regression analysis due to the high correlation with SYSPROV and because SYSPROV seems to be more efficient explanatory variable it is chose instead of SUBLEDGR.[42]

The following explanatory variables have significant (at least 10% level) positive both Spearman and Pearson correlations with PUBLISH variable; BUSINC, TRANSCOM, EDUCAT, SYSPROV and SYSMGMT. The following two explanatory variables have significant (at least 10% level) negative both Spearman and Pearson correlations with PUBLISH variable; INTERIOR and SOCIAL. The number of observations in the correlation analyses varies from 85 to 177 because of the missing values. For example, the LOCATION variable has only 85 observations. See table five for more information.

[41] Same as binary or binomial logistic regression.
[42] Collinearity (or multicollinearity) is the undesirable situation in regression analysis where the correlations among the independent (explanatory) variables are strong. It is quite obvious that the amount of system providers correlate with the amount of different subledgers.

Table 5: Correlations of Variables Hypothesized to Affect the Likelihood of Publishing an Annual Report

Pearson's correlation (parametric) is in the upper diagonal and Spearman's correlation (non-parametric) is in the lower diagonal. All the coefficients significant at least at 10% level are highlighted. Number of observations varies from 85 to 117. See the specific numbers from the table four. All the correlation tests are two-tailed tests. BUSINC is a sum of all the income from market prized actions which is divided by total income, LNLIABS is a natural logarithm of the liabilities of the respective agency, DEBT is a sum of all the debt of the respective agency which is divided by total assets, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the Ministry of Agriculture & Forestry, EDUCAT is the Ministry of Education, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, FINANCE is the Ministry of Finance, LOCATION is a dummy variable which receives value one (1) if the agency is located in Helsinki-Espoo-Vantaa metropolitan area & otherwise Zero (0), SUBLEDGER is just a total amount of different sub ledgers in the agency, SYSPROV is just a total amount of different system (accounting & human resources) providers of the specific agency, SYSMGMT is a dummy variable which receives value one (1) if all or more than half of the agency's systems (accounting & HR) are managed by a third party (e.g. service center) & otherwise zero (0), AUACTIO receives value one (1) if the agency is ordered by the State Audit Office (in the audit report) to take actions concerning its internal control, financial statement, cost accounting, etc., & otherwise zero (0). PUBLISH receives value one (1) if the agency publish the annual report (70/117) and otherwise zero (0).

	1	2	3	4	5	6	7	8
1-BUSINC		-0,2767	0,2953	0,3542	-0,1059	-0,0653	0,1200	-0,1791
Sig. (2-tailed)		**0,0025**	**0,0012**	**0,0001**	0,2557	0,4844	0,1975	**0,0533**
2-LNLIABS	-0,1918		-0,4393	-0,4262	0,3000	0,0580	0,0868	-0,0575
Sig. (2-tailed)	**0,0383**		**0,0000**	**0,0000**	**0,0010**	0,5342	0,3520	0,5382
3-DEBT	0,2046	-0,7127		0,5722	-0,1446	-0,1495	-0,2528	-0,1224
Sig. (2-tailed)	**0,0269**	**0,0000**		**0,0000**	**0,1198**	0,1077	**0,0060**	0,1886
4-TRADE	0,2847	-0,4650	0,4282		-0,1520	-0,1619	-0,3072	-0,2392
Sig. (2-tailed)	**0,0019**	**0,0000**	**0,0000**		0,1019	**0,0811**	**0,0008**	**0,0094**
5-TRANSCOM	-0,1153	0,2366	-0,2697	-0,1520		-0,0782	-0,1484	-0,1155
Sig. (2-tailed)	0,2157	**0,0102**	**0,0033**	0,1019		0,4020	0,1103	0,2149
6-AGRIFOR	-0,0247	0,0589	-0,2137	-0,1619	-0,0782		-0,1581	-0,1231
Sig. (2-tailed)	0,7916	0,5283	**0,0207**	**0,0811**	0,4020		**0,0886**	0,1861
7-EDUCAT	0,1976	0,1670	-0,2156	-0,3072	-0,1484	-0,1581		-0,2335
Sig. (2-tailed)	**0,0327**	**0,0720**	**0,0195**	**0,0008**	0,1103	**0,0886**		**0,0113**
8-INTERIOR	-0,1813	-0,0582	0,0624	-0,2392	-0,1155	-0,1231	-0,2335	
Sig. (2-tailed)	**0,0504**	0,5330	0,5037	**0,0094**	0,2149	0,1861	**0,0113**	
9-SOCIAL	-0,0811	-0,0800	0,1483	-0,1415	-0,0683	-0,0728	-0,1382	-0,1076
Sig. (2-tailed)	0,3847	0,3911	0,1105	0,1281	0,4641	0,4352	0,1374	0,2484
10-FINANCE	-0,1021	0,1285	0,1354	-0,1304	-0,0630	-0,0671	-0,1273	-0,0991
Sig. (2-tailed)	0,2733	0,1674	0,1456	0,1611	0,4999	0,4722	0,1712	0,2876
11-LOCATION	-0,2579	0,2846	-0,2879	-0,1641	0,1716	0,0724	-0,2411	-0,1355
Sig. (2-tailed)	**0,0172**	**0,0083**	**0,0075**	0,1333	0,1163	0,5104	**0,0262**	0,2162
12-SUBLEDGR	-0,0668	0,2619	0,0912	-0,0890	-0,0095	-0,1186	0,0827	0,0063
Sig. (2-tailed)	0,4964	**0,0067**	0,3523	0,3645	0,9233	0,2258	0,3995	0,9492
13-SYSPROV	0,1651	0,2235	-0,0015	0,1012	0,1074	-0,0416	0,1852	-0,2221
Sig. (2-tailed)	**0,0908**	0,0213	0,9879	0,3022	0,2733	0,6716	**0,0574**	**0,0221**
14-SYSMGMT	-0,1767	0,4368	-0,4089	-0,3091	0,1245	0,0395	0,1245	-0,0864
Sig. (2-tailed)	**0,0727**	**0,0000**	**0,0000**	**0,0014**	0,2081	0,6904	0,2081	0,3829
15-AUACTIO	0,1298	0,0177	0,0823	0,1650	0,0693	-0,0328	0,0643	-0,2240
Sig. (2-tailed)	0,1726	0,8533	0,3883	**0,0822**	0,4676	0,7310	0,5004	**0,0176**
16-PUBLISH	0,2424	-0,0723	0,0397	0,1327	0,1529	0,0403	0,1592	-0,1821
Sig. (2-tailed)	**0,0085**	0,4387	0,6705	0,1538	**0,0998**	0,6665	**0,0865**	**0,0494**

Number of Observations Varies from 85 to 117

Table 5: (Cont'd) Correlations of Variables Hypothesized to Affect the Likelihood of Publishing an Annual Report

	9	10	11	12	13	14	15	16
1-BUSINC	-0,0628	-0,1010	-0,2090	-0,0515	0,1193	-0,2210	0,1370	0,2490
Sig. (2-tailed)	0,5012	0,2784	**0,0549**	0,6004	0,2232	**0,0241**	0,1497	**0,0068**
2-LNLIABS	-0,0857	0,1686	0,3038	0,2066	0,1530	0,3928	0,0617	-0,0921
Sig. (2-tailed)	0,3580	**0,0691**	**0,0047**	**0,0336**	0,1173	**0,0000**	0,5183	0,3233
3-DEBT	0,0004	0,1443	-0,3779	0,1876	0,0656	-0,3985	0,2831	0,1224
Sig. (2-tailed)	0,9962	0,1207	**0,0004**	**0,0542**	0,5043	**0,0000**	**0,0025**	0,1887
4-TRADE	-0,1415	-0,1304	-0,1641	-0,0617	0,0368	-0,3091	0,1650	0,1327
Sig. (2-tailed)	0,1281	0,1611	0,1333	0,5300	0,7082	**0,0014**	**0,0822**	0,1538
5-TRANSCOM	-0,0683	-0,0630	0,1716	0,0239	0,1090	0,1245	0,0693	0,1529
Sig. (2-tailed)	0,4641	0,4999	0,1163	0,8080	0,2661	0,2081	0,4676	**0,0998**
6-AGRIFOR	-0,0728	-0,0671	0,0724	-0,0967	-0,0643	0,0395	-0,0328	0,0403
Sig. (2-tailed)	0,4352	0,4722	0,5104	0,3243	0,5125	0,6904	0,7310	0,6665
7-EDUCAT	-0,1382	-0,1273	-0,2411	0,0628	0,2218	0,1245	0,0643	0,1592
Sig. (2-tailed)	0,1374	0,1712	**0,0262**	0,5225	**0,0223**	0,2081	0,5004	**0,0865**
8-INTERIOR	-0,1076	-0,0991	-0,1355	-0,0391	-0,1885	-0,0864	-0,2240	-0,1821
Sig. (2-tailed)	0,2484	0,2876	0,2162	0,6906	**0,0530**	0,3829	**0,0176**	**0,0494**
9-SOCIAL		-0,0586	0,1579	0,0641	-0,1221	0,0395	0,0369	-0,1608
Sig. (2-tailed)		0,5299	0,1490	0,5141	0,2126	0,6904	0,6994	**0,0832**
10-FINANCE	-0,0586		0,1096	0,3024	0,1009	0,1130	0,0000	0,1115
Sig. (2-tailed)	0,5299		0,3182	**0,0016**	0,3036	0,2532	1,0000	0,2315
11-LOCATION	0,1579	0,1096		-0,1722	-0,3100	0,1305	-0,0856	-0,0780
Sig. (2-tailed)	0,1490	0,3182		0,1150	**0,0039**	0,2398	0,4502	0,4783
12-SUBLEDGR	0,1148	0,2328	-0,1484		0,7203	0,0349	0,1243	0,1651
Sig. (2-tailed)	0,2411	**0,0163**	0,1753		**0,0000**	0,7250	0,2156	**0,0907**
13-SYSPROV	-0,1269	0,1128	-0,2569	0,6996		0,1432	0,1322	0,2782
Sig. (2-tailed)	0,1949	0,2495	**0,0176**	**0,0000**		0,1470	0,1876	**0,0039**
14-SYSMGMT	0,0395	0,1130	0,1305	0,0499	0,1556		-0,2374	0,2480
Sig. (2-tailed)	0,6904	0,2532	0,2398	0,6152	0,1148		**0,0180**	**0,0111**
15-AUACTIO	0,0369	0,0000	-0,0856	0,1465	0,1299	-0,2374		0,0000
Sig. (2-tailed)	0,6994	1,0000	0,4502	0,1437	0,1954	**0,0180**		1,0000
16-PUBLISH	-0,1608	0,1115	-0,0780	0,1198	0,3218	0,2480	0,0000	
Sig. (2-tailed)	**0,0832**	0,2315	0,4783	0,2211	**0,0008**	**0,0111**	1,0000	

Number of Observations Varies from 85 to 117

5.3.2. Binary Logistic Regression Analyses

Finally the main analysis of the first objective of this thesis is introduced. Binary logistic regression is a form of regression that is used when the dependent variable is dichotomous i.e. either publishes an annual report (1) or not (0) and the independent variables are continuous variables, categorical variables, or both. Unlike ordinary least squares regression (OLS), logistic regression does not assume linearity of relationship between the independent variables

and the dependent, does not require normally distributed variables, does not assume homoscedasticity and in general has less stringent requirements. But the multicollinearity[43] is a problem also in binary logistic regression. It seems that collinearity is not problem in this case even there are correlations among explanatory variables.[44] Either there is not an F-value to test the whole model's goodness of fit but SPSS gives another way to test the whole model's coefficient goodness-of-fit and that is called, the model CHI-square, which should be significant at 5% level or better so the model adequately fits the data.

In logistic regression the coefficient term measures the likelihood of event's occurrence and in this thesis the event is the likelihood of publishing an annual report. In linear regression, the r-square statistic measures the proportion of the variation in the response that is explained by the model. The r-square statistic cannot be exactly computed for logistic regression models, so the approximation, Nagelkerke R square is computed instead which is a so called pseudo R square. Larger pseudo r-square statistics indicate that the model, to a maximum of one, explains more of the variation. These ratios give some kind of knowledge about the explanatory power of the regression and are commonly reported in earlier studies. Hypothesized signs (positive or negative) of coefficients are also included in the table six and of course, there is no expected sign for constant term. The expected sign are based on the hypotheses settled in chapter four whereas are based on previous theories, empirical studies and the author's assumptions. The model below is in order to test the probability or likelihood that an agency publishes an annual report.

$$P(\text{Publish the Annual Report}) = \frac{1}{(1+e^{-Z})}, \text{ where Z receives the following values:}$$

The first binary regression logistic model contains all the 14 explanatory variables. Because of the nature of the binary logistic regression analysis it is relevant to test the full model even the correlations weren't significant in many cases. Table six show all the details of the first model and the in depth analysis can be found from section 5.6. and in chapter six.

[43] Correlation between the independent variables.
[44] The multicollinearity is not a problem among the explanatory variables of this paper. SPPS reports that the VIF values of every explanatory variable are under 10 and the Condition Index values are also under 30 except in the case AUACTIO variable which receives Condition Index value of 36. See also table five.

$$Z_1 = \beta_1 + \beta_2 BUSINC + \beta_3 LNLIABS + \beta_4 DEBT + \beta_5 TRADE + \beta_6 TRANSCOM + \beta_7 AGRIFOR + \beta_8 EDUCAT + \beta_9 INTERIOR + \beta_{10} SOCIAL + \beta_{11} FINANCE + \beta_{12} LOCATION + \beta_{13} SYSPROV + \beta_{14} SYSMGMT + \beta_{15} AUACTIO \quad (1)$$

The second model contains only the five explanatory variables which correlations with PUBLISH variable were the most significant ones.

$$Z_2 = \beta_1 + \beta_2 BUSINC + \beta_3 EDUCAT + \beta_4 INTERIOR + \beta_5 SYSPROV + \beta_6 SYSMGMT \quad (2)$$

The third model is based on the second model i.e. the insignificant EDUCAT and INTERIOR variables are just excluded. Again, six seven show all the details of the third model and the in depth analysis can be found from section 5.6. and in chapter six.

$$Z_3 = \beta_1 + \beta_2 BUSINC + \beta_3 SYSPROV + \beta_4 SYSMGMT \quad (3)$$

All the models are statistically significant at least at 1% level but the best model seems to be number one if Nagelkerke R-Square or percentage predicted correct is used as a basis. Consistent with study's expectations, it seems that it is more likely to publish an annual report among agencies which (H1) do business with their stakeholders; (H4) are under management of certain ministries (Ministry of Transport and Communications Finland, Ministry of Agriculture and Forestry, Ministry of Education); and (H6) have many different system providers and have outsourced their system management. However, inconsistent with study's expectations, it seems that, determinants such as (H2) size; (H3) leverage; (H5) location; and (H7) State Audit Office's orders do not affect the likelihood of publishing an annual report. The more thorough analysis of hypotheses and other results of the first objective (likelihood of publishing an annual report) of this thesis can be found in section 5.6. and in chapter six.

Table 6: Binary Logistic Regression Analyses

Dependent variable is a dichotomous variable, which receives value one (1) when the agency publishes the annual report and otherwise zeros (0). Total number of agencies is 117 and 70 agencies publish the annual report (47 don't). Number of observations is only 104 due to the fact that variable SYSMGMT has 13 missing cases. The coefficients significant at least at 10% level are highlighted. BUSINC is a sum of all the income from market prized actions which is divided by total income, LNLIABS is a natural logarithm of the liabilities of the respective agency, DEBT is a sum of all the debt of the respective agency which is divided by total assets, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the Ministry of Agriculture & Forestry, EDUCAT is the Ministry of Education, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, FINANCE is the Ministry of Finance, LOCATION is a dummy variable which receives value one (1) if the agency is located in Helsinki-Espoo-Vantaa metropolitan area & otherwise Zero (0), SYSPROV is just a total amount of different system (accounting & human resources) providers of the specific agency, SYSMGMT is a dummy variable which receives value one (1) if all or more than half of the agency's systems (accounting & HR) are managed by a third party (e.g. service center) & otherwise zero (0), AUACTIO receives value one (1) if the agency is ordered by the State Audit Office (in the audit report) to take actions concerning its internal control, financial statement, cost accounting, etc., & otherwise zero (0). PUBLISH receives value one (1) if the agency publish the annual report (70/117) and otherwise zero (0).

Dependent variable: Publish (1) & Not (0) (PUBLISH)							
		Model (1)		Model (2)		Model (3)	
Independent variables	**Expected sign**	**Coefficient**	**Significance**	**Coefficient**	**Significance**	**Coefficient**	**Significance**
CONSTANT	+/-	-2,9364	0,3520	-3,1502	**0,0019**	-3,3122	**0,0006**
H1: Competition							
BUSINC	+	1,9811	0,1607	2,5875	**0,0125**	2,7978	**0,0063**
H2: Size							
LNLIABS	+	-0,2759	0,1296	-	-	-	-
H3: Leverage							
DEBT	+	0,1539	0,2753	-	-	-	-
H4: Ministry							
TRADE	+/-	1,5409	0,1931	-	-	-	-
TRANSCOM	+/-	3,4133	**0,0425**	-	-	-	-
AGRIFOR	+/-	2,4797	**0,0744**	-	-	-	-
EDUCAT	+/-	1,9803	**0,0828**	0,3585	0,5288	-	-
INTERIOR	+/-	1,8133	0,1120	-0,2510	0,6824	-	-
SOCIAL	+/-	-0,3317	0,8010	-	-	-	-
FINANCE	+/-	8,6079	0,7986	-	-	-	-
H5: Location							
LOCATION	+	1,1692	0,2157	-	-	-	-
H6: Internal Systems							
SYSPROV	+	0,6176	**0,0706**	0,3978	**0,0442**	0,4186	**0,0313**
SYSMGMT	+	3,1280	**0,0048**	1,6911	**0,0088**	1,7794	**0,0057**
H7: Audit Report							
AUACTIO	-	-0,0866	0,9065	-	-	-	-
Number of observations			78		104		104
Nagelkerke R Square			0,4844		0,2696		0,2623
Percentage Predicted Correct			83,3333		71,1538		68,2692
Model CHI-square (Sig.)			0,0018		0,0003		0,0000

5.4. DISCLOSURE LEVEL IN PUBLIC SECTOR ANNUAL REPORTS

This section empirically analyzes the second objective of this thesis that is: The level of Voluntary Disclosed Information in the Annual Reports of Finnish Government Agencies. The first section discuss about the use of so-called disclosure index as a method to capture the level of disclosed information in the annual reports, the second section shows the disclosure

index this study uses and how it has been developed, after these two sections there are a section for descriptive statistics.

5.4.1. Review of the Disclosure Index Method

This thesis uses Marston and Shrives (1991) review article about the use of disclosure indices in accounting research as a main methodological guide when constructing the disclosure index of this specific study with specific interests of this thesis. Of course all other relevant founding about disclosure index method of previous papers analyzed in chapter three is also taken account when defining the specific disclosure index this study uses.

The disclosure of information in company reports is an area that has aroused a great deal of academic interest in recent years mainly in private sector, as noticed in chapter three. One research instrument that has been used in numerous publications is an index of disclosure of particular information in company reports and as showed in chapter three it is also applicable to use with government entities' reports. However, the index can be used to show compliance with regulations if the items in the index are so chosen or conversely it can be used to show the level of voluntary disclosure.[45] Also, an index can include a mixture of items required by regulation and voluntary items if this suits the purpose of the research project. Items chosen for the index are likely to be a fairly small sub set of the population of all the items that can be disclosed i.e. the number of items that can be disclosed by a company is very large, if not infinite. The usefulness of the disclosure index as a measure of disclosure is therefore critically dependent on the selection of items to be included in the index (Marston and Shrives, 1991) and that is the main reason why disclosure index method is described and analyzed in quite great detail before the construction of the specific index of this thesis.

As mentioned in paragraph above, the information disclosed can be divided into two broad categories, required disclosure and voluntary disclosure. Required disclosure is laid down by statute, professional regulations and the listing requirements of stock exchanges. The extent to which companies comply with legal and regulatory requirements depends on the strictness or laxity of government, professional and other regulatory bodies (Marston and Shrives, 1991). Voluntary disclosure, in excess of the minimum, may arise where corporate perceptions of the

[45] In this paper the level of voluntary disclosure is tried to capture due to the fact that there is no laws or regulations concerning the content of Finnish government agencies' annual reports. See chapter two.

benefits arising outweigh the costs. Information in the annual report consists of qualitative and quantitative data and quantitative data is both financial and non-financial. One method of measuring the information disclosed would be to count all the data items, i.e. the number of words and numbers shown in the reports which is suggested by Copeland & Frederiks (1968) when evaluating disclosure of changes in common stock. Marston and Shrives (1991) write that measuring information disclosure by counting data items is not a satisfactory solution to the problem because there are repetitions of certain numbers and words in annual reports.

The index scores awarded to companies can be considered to reliable if the results can be replicated by another researcher and, of course, in order for a subsequent researcher to be able to replicate the scoring, clear instructions are needed on problem areas. Marston and Shrives (1991) write that since the scores are extracted from printed annual reports which constant over time there is no obstacle to repetition. The index scores can be considered to be valid if they mean what the researchers intended. That is to say, do the index scores have any meaning as a measure of information disclosure? Cooke and Wallace (1989) have stated that researchers should provide evidence that the measures are valid and reliable. Marston and Shrives (1991) write that the validity of disclosure indices as a measure of information disclosure cannot be accepted without question but no other method for measuring disclosure has been developed and the method of counting all data items, mentioned above, has been discussed but not attempted. The fact that no one particular index has gained favour with researchers illustrates another facet of the validity problem which means that Most researchers adapt and tailor existing indices to meet their own perceived needs and this study is no conception in that manner. This thesis, as well tries to create an index that is valid in the particular research environment being investigated which in this case is the level of disclosed information in the Finnish government agencies' annual reports. Marston and Shrives (1991) write that researchers have implicitly considered it more advantageous to employ different indices and thereby to lose the advantage of direct comparison with earlier project but any attempt to construct a universally valid disclosure index is unlikely to be meaningful unless such an agreement can be established.

There are four distinct levels of measurement: the nominal or classificatory scale, the ordinal or ranking scale, the interval scale and the ratio scale and it is clear that a disclosure index achieves the level of ordinal measurement but whether it achieves the interval measurement is less clear (Marston and Shrives, 1991). The use of weightings in the disclosure index appears

to be an attempt to achieve measurement on the level of interval scale. However, weightings are typically achieved by conducting attitude surveys among relevant user groups instead of researcher's subjective decision.

Parametric statistical tests are only appropriate when measurement on an interval or ratio scale has been achieved and the population is normally distributed which means that non-parametric statistical tests should be employed when nominal or ordinal scale measurement has been achieved. In connection with this area of controversy and debate, Gregoire and Driver (1987) have shown empirically that using parametric tests on ordinal data does not lead to great problems. Davison & Sharma (1988) provide a theoretical proof that there is no need for the measurements to be on an interval scale if the assumptions of parametric tests (normality & homogeneity) are met. Marston and Shrives (1991) concludes that, clearly, mixtures of parametric and non-parametric tests are being carried out using index scores. The arguments of statisticians seem to indicate that parametric methods are permissible despite the fact that measurement on an interval scale has probably not been achieved. Even the discussion above, this study uses non-parametric correlation tests as a main analysis tool but also reports the results of parametric tests in the following three sections.

Marston and Shrives (1991) write about the construction of disclosure index in the following way. The first step in the construction of a disclosure index is the selection of items. Since the number of items that could possibly be disclosed is very large, practical reasons dictate taking a selection of items. Some criterion is therefore needed for making the choice. Different user groups may tend to view different items as important. Thus, the selection of items by authors often depends on the user group orientation of the index. A good and quite common example of selections criteria is Cooke's (1989) study where the selection of items is based in previous studies, disclosures recommended by International Accounting Standards Committee (IASC), disclosures recommended by the Swedish public sector accounting standards body, legal requirements and items considered to be desirable by two out of three Swedish practising accountants who were consulted at the pilot study stage.

Even though, this thesis uses unweighted disclosure index is worth to mention that Firth (1980) noted that unweighted and weighted scores i.e. degree of importance showed similar results. Also Robbins and Austin (1986)'s paper (analyzed in chapter three) showed similar kind of results. Cooke (1989) assumed, in effect, that the subjective weights of the different

user groups would average each other out. In support of this assertion he relied on the findings of Spero (1979) who reported that attaching weightings was irrelevant because those enterprises that are better at disclosing "important items" are also better at disclosing "less important items". This approach of unweighted items has become the norm in annual report studies (Courtis, 1996).[46] There are also problems concerning the calculation of an index score. For example Wiseman (1982) awarded score of three for items disclosed in quantitative terms, two was awarded for specific but non-quantitative information and one was assigned where items were referred to only in general terms. Another problem that arises is the fact that certain items of disclosure may not be applicable to a particular company. Companies' should obviously not be penalized for non-disclosure in this case.

A number of research projects over the years have made use of a disclosure index as a research tool and it is clear from the "index-method-analysis" above that construction of an index is a difficult matter that generally involves subjective judgement on the part of the researchers. Measuring company information disclosure cannot be carried out in precise scientific way and the efforts of the researcher to minimize subjectivity and design a more objective disclosure are of relevance here. Healy and Palepu (2001) also write that studies with self – constructed measures of disclosure face a different set of problems. Because the authors have developed their own metric of voluntary disclosure, there is increased confidence the measure truly captures what is intended. However, to the extent that construction of the metrics involves judgement on the part of the researcher, the findings may be difficult to replicate. In additions, these metrics typically rely on disclosures provided in the annual report or other such public documents. As a result any disclosures that firms provide in analyst meetings, conference calls, and other such venues are omitted from the analysis. Core (2001) also mention that improved measure of disclosure quality, such as, word-processing programs and more sophisticated natural language processing techniques need to be developed. Despite all of this, "a research tool like disclosure index method will not continue to be used if it produces poor results".

[46] It is easy to construct a counter example which illustrates the fact that weighted and unweighted scores do not necessarily give the same results. Consider an index of 100 items that is weighted with the first 50 items having a weight of two and the remaining 50 items having a weight of one. Company A discloses all of the first 50 items and no others and company B discloses all of the second 50 items and no others. Using the unweighted index both companies will score 50. Using the weighted index company A will score 100 and company B will score 50.

5.4.2. Definition of the Public Sector Disclosure Index (PSD-Index)

The selection of items for the Public Sector Disclosure Index (PSD Index) of this specific thesis is based in previous studies' indices, recommendations of Global Reporting Initiative (GRI) and items considered to be desirable by the author and as mentioned earlier, all the methods are from Marston and Shrives (1991) review paper and previous studies. The PSD Index consists 26 items and it is divided into four different sections: Common Items, Economic Items, Social Items and Environment Items. The PSD-Index can be also considered to measure the respective agencies sustainability reporting or triple-bottom-line reporting because it consist all the three elements of sustainability concept, specifically economical, social and environmental points of view. However, the main mission of the PSD-Index is still to measure the level of disclosure in general but it also gives a good insight about the current state of sustainability reporting of Finnish government agencies' annual reports. The four different sections in the index won't nor be analysed separately, for example in the correlation or regression analyses.[47] All the items are described in great detail in the following paragraph with instructions to replicate the respective index in order of reliability. The specific "easy to find concept" in the instructions means that there should be own pages, for example, in the table of content for the respective item in the annual report or other kind of clearly separate section like title, header, etc. in order to receive value one.[48] Table seven shows the summary of all the items in the PSD - Index and lists the previous papers the items are based on.

Common Items (8). PAGES is just a total number of pages in the annual report i.e. the last page number. If the agency publishes only the web-report it receives "N/A value". PAGESMED receives value one when the annual report has more pages than 32 which is the median of the pages of all the annual reports and otherwise zero. SWEDISH, ENGLISH and OTHERLAN are dichotomous variables which receive value one if there is a summary of the whole annual report or the management review or the whole report is both in Swedish / English / other language & Finnish and otherwise zero. It receives also zero if the annual report is only in one language no matter is the language Finnish, Swedish, English or any other language. VALUES (arvot) is a dichotomous variable which receives value one if the agency's values are listed in clearly separate way like a box, list, title, or anything else that's easy to find and otherwise zero. MISSION is a dichotomous variable which receives value

[47] TOTAL and TOTALOG have already problems (continuity and normality) with string requirements of the regression analysis. The problems would be even more severe if the sections are analyzed separately.

[48] E.g. if targets and results of year 2002 are just mentioned somewhere in the text (for example, in the management review) the item receives value zero (0) but if there are own pages, title, etc. the item receives value one (1).

one if the agency has included its mission[49] in its annual report and otherwise zero. Also the mission-item should be easy to find which means that the criterion is same as with values-variable. CHART is a dichotomous variable which receives value one if the agency has included its organization chart or list of the parts of its organization with respective responsible people and otherwise zero. PAPER is a dichotomous variable which receives value one if the agency's annual report's paper size is A4 and otherwise zero. If the agency publishes only the web-report it receives also value zero.

Economic Items (9). ECOPAGES is a dichotomous variable which receives value one if the agency has included some kind of clearly separate section or pages for the economic/financial issues in its annual report and again otherwise zero. ECOREV is a dichotomous variable which receives value one if the agency has included its statement of revenues and expenses[50] in its annual report and otherwise zero. ECOBAL is a dichotomous variable which receives value one if the agency has included its balance sheet in its annual report and otherwise zero. ECOBUD is a dichotomous variable which receives value one if the agency has included the statement of budget's realization[51] in its annual report and otherwise zero. ECOVALFM is also a dichotomous variable which receives value one if there are own pages or other kind of clearly separate section for the discussion / analysis of value for money concept[52] or its components; economy, efficiency and effectiveness and otherwise zero. ECOTARG receives value one if the respective agency has included a clearly separate section for the analysis about targets and results. Otherwise zero. Again the analysis should be easy to find. ECORISKS receives value one if there are own pages or other kind of clearly separate section for the risk management issues or risk issues in general and otherwise zero. ECOCTRL. If there own pages or other kind of clearly separate section for the internal control issues then receives value one and otherwise zero. ECOOPER receives value one if there are owns pages or other kind of clearly separate section for the chargeable operations issues[53] and otherwise zero. There is only one agency, The Consumer Complaint Board that does not have any income from the so called chargeable operations which mean that it is not possible for it to receive value one from this variable. Any actions concerning this are not done due the insignificance of the problem.

[49] In Finnish, Toiminta-ajatus, toiminnan päämäärä, toiminnan lähtökohta.
[50] In Finnish, tuotto-ja kululaskelma
[51] In Finnish, talousarvion toteumalaskelma
[52] E.g. tuloksellisuuden osa-alueet; taloudellisuus, tuottavuus ja vaikuttavuus.
[53] In Finnish, maksullinen toiminta.

Social Items (7). SOCPAGES receives value one if there are own pages or other kind of clearly separate section for the personnel issues and otherwise zero. SOCAGE, GRI Indicator LA1 receives value one if the annual report includes breakdown of workforce by age and otherwise zero. SOCGEN, GRI Indicator LA1 receives value one if the annual report includes breakdown of workforce by gender and otherwise zero. SOCEDU, GRI Indicator LA1 receives value one if the annual report includes breakdown of workforce by educational background and otherwise zero. SOCCONT, GRI Indicator LA1 receives value one if the annual report includes breakdown of workforce by type of employment contract i.e. permanent / fixed term or temporary and otherwise zero.[54] SOCABS, GRI Indicator LA7 receives value one if the annual report includes absentee rates of employees and otherwise zero.[55] SOCTRAIN, GRI Indicator LA9 receives value one if the annual report includes, for example, amount spent on training or average hours of training per year or training per year per employee, etc. and otherwise zero.[56] All the personnel related items introduced above should be reported in quantitative terms in order to receive value one.

Environment Items (2). ENVPAGES receives value one if there are owns pages or other kind of clearly separate section for the environmental issue and otherwise zero. WASTE (GRI Indicator EN11) receives value one if the total amount of waste by type and destination is reported and otherwise zero.[57]

TOTAL is just a sum of all the items in the PSD Index except PAGES, OTHERLAN and PAPER which means that the maximum score from the index is 24. Instead of number of pages this thesis uses PAGESMED item which receives value one when the annual report has more pages than 32 which is the median of the pages of all the annual reports and otherwise zero. OTHERLAN item is excluded because none of the agencies published any summaries in any other language than Swedish or English and because it is not based on any previous studies. Even though none of the agencies reported the amount of waste it is not excluded because it is based on previous studies and it is assumed to be important.

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[54] The original GRI Indicator LA1 states that the following information should be reported in order of following the Guidelines; breakdown of workforce, where possible, by region / country, status (employee / non-employee), employment type (full time / part time), and by employment contract (indefinite or permanent / fixed term or temporary). Agency should also identify workforce retained in conjunction with other employers (temporary agency workers or workers in co-employment relationships), segmented by region/country.

[55] The original GRI Indicator LA1 states that the following information should be reported in order of following the Guidelines; standard injury lost day, and absentee rates and number of work related fatalities, including subcontracted workers.

[56] The original GRI Indicator LA1 states that the following information should be reported in order of following the Guidelines; average hours of training per year per employee by category of employee (e.g. senior management, middle management, professional, technical, administrative, production and maintenance.

[57] The original GRI Indicator LA1 states that the following information should be reported in order of following the Guidelines; total amount of waste by type and destination where destination refers to the method by which way waste is treated, including composting, reuse, recycling, recovery, incineration, or land filling e.g. the organisation should explain type of classification method and estimation method.

Table 7: Summary of the Public Sector Disclosure Index

Table seven summarizes the PSD-Index. The index is divided into four sections: Common, Economic, Social and Environment. The whole index consists 26 items. There are also short explanations for each item and the "Based on" column show from which study the respective item is from. N/A means that this thesis didn't found/analyse previous papers with items such as PAGES, SWEDISH, etc. The more specific descriptions can be found from previous pages. All the items (except PAGES) are so called dichotomous variables which receive value one (1) if the respective item exists in the annual report and otherwise zero (0).

No	Item	Explanation	Based on (For Example)
			Common Items
1	**PAGES**	Annual report's number of pages	N/A
2	**SWEDISH**	Summary in Swedish	N/A
3	**ENGLISH**	Summary in English	N/A
4	**OTHERLAN**	Summary in any other language	N/A
5	**VALUES**	Agency's values	N/A
6	**MISSION**	Agency's mission	Meek, Roberts & Gray (1995), Botosan (1997)
7	**CHART**	Organization chart	Meek, Roberts & Gray (1995), Ryan, Stanley & Nelson (2002)
8	**PAPER**	Size of the paper (A4)	N/A
			Economic Items
9	**ECOPAGES**	Economic pages / review	Ryan, Stanley & Nelson (2002), Banks, Fisher & Nelson (1997)
10	**ECOREV**	Statement of revenues & expenses	Ryan, Stanley & Nelson (2002), Banks, Fisher & Nelson (1997), Hope (2002), Richardson & Welker (2001)
11	**ECOBAL**	Balance sheet	Ryan, Stanley & Nelson (2002), Banks, Fisher & Nelson (1997), Hope (2002)
12	**ECOBUD**	Statement of budget's realization	Ryan, Stanley & Nelson (2002), Banks, Fisher & Nelson (1997), Hope (2002)
13	**ECOVALFM**	Value for money reporting	Ryan, Stanley & Nelson (2002)
14	**ECOTARG**	Targets & results of year 2002	Ryan, Stanley & Nelson (2002), Banks, Fisher & Nelson (1997), Meek, Roberts & Gray (1995), Botosan (1997), Richardson & Welker (2001)
15	**ECORISKS**	Risks & risk management	Richardson & Welker (2001),
16	**ECOCTRL**	Internal control issues	Ryan, Stanley & Trevor (2002)
17	**ECOOPER**	Chargeable operations reporting	N/A
			Social Items
18	**SOCPAGES**	Personnel pages / review	Ryan, Stanley & Nelson (2002), Richardson & Welker (2001), Global Reporting Initiative (GRI)
19	**SOCAGE**	Breakdown of workforce by age	Global Reporting Initiative (GRI)
20	**SOCGEN**	Breakdown of workforce by gender	Meek, Roberts & Gray (1995), Global Reporting Initiative (GRI)
21	**SOCEDU**	Breakdown of workforce by educational background	Global Reporting Initiative (GRI)
22	**SOCCONT**	Breakdown of workforce by type of employment contract	Global Reporting Initiative (GRI)
23	**SOCABS**	Absentee rates of employees	Global Reporting Initiative (GRI)
24	**SOCTRAIN**	Personnel training	Meek, Roberts & Gray (1995), Global Reporting Initiative (GRI)
			Environment Items
25	**ENVPAGES**	Environment pages / review	Ryan, Stanley & Nelson (2002), Meek, Roberts & Gray (1995), Richardson & Welker (2001), Global Reporting Initiative (GRI)
26	**WASTE**	Amount of waste	Global Reporting Initiative (GRI)

PAPER item is excluded, of course due to the fact that paper size of the annual report does not affect to the level of disclosure in it.

5.4.3. Descriptive Statistics of Disclosure Level in Annual Reports

The second objective of this thesis was to investigate what is the level of disclosed information in the Finnish government agencies' annual reports. This thesis uses the self-made disclosure index which was meant to measure the information content of the respective reports. Some of the items in the PSD-Index are reviewed more thoroughly in the following paragraphs but, still, the main results can be found from tables 8, 9, 10, 13 and from the section 5.6 that is only the special observations are discussed in this section but in general it seems that reporting about social issues such as personnel is the strongest area. Correlations among the items in the disclosure index can be found from table 14.

Table eight shows the ministries and the mean scores of every ministry. For, example 88 % percentage of agencies under management of Ministry of Transportation and Communication publish the annual report. The average score from the PSD – Index they receive is 12, 1 out of possible 24.

Table 8: Descriptive Statistics of the Level of Voluntary Disclosure (Ministry Analysis)

Mean score column shows the average disclosure index score of the respective agency. Publish column shows the number of agencies under respective ministry's control which do publish the annual report in the year 2002. Total column shows the total number of agencies under respective ministry's control. Publish% column just show the percentage of agencies which publish the annual report in the year 2002.

Ministry	Description	Mean Score	Publish	Total	Publish%
PARLIAMN	Parliament of Finland	N/A	0	2	0 %
TRADE	Ministry of Trade and Industry	6,2	20	28	71 %
TRANSCOM	Ministry of Transport and Communications Finland	12,1	7	8	88 %
AGRIFOR	Ministry of Agriculture and Forestry	9,2	6	9	67 %
JUSTICE	Ministry of Justice Finland	16,0	1	2	50 %
EDUCAT	Ministry of Education	7,2	20	27	74 %
DEFENCE	Ministry of Defence of Finland	4,0	1	3	33 %
INTERIOR	Ministry of the Interior	6,4	7	18	39 %
SOCIAL	Ministry of Social Affairs and Health	10,0	2	7	29 %
PRESIDEN	The President of the Republic of Finland	N/A	0	1	0 %
LABOUR	Ministry of Labour	N/A	0	1	0 %
FOREIGN	Ministry for Foreign Affairs	N/A	0	1	0 %
PRIMEOFF	Prime Minister's Office	N/A	0	1	0 %
FINANCE	Ministry of Finance	11,0	5	6	83 %
ENVIRON	The Finnish Ministry of the Environment	8,0	1	3	33 %
Total		8,0	70	117	60 %

Maximum Score of Disclosure Index	24
Number of Ministries	15

Table 9: Descriptive Statistics of the Level of Voluntary Disclosure (Item Analysis)

Table nine show the frequencies of all the item in the Public Sector Disclosure Index. Include column show how many agencies include the respective item in its annual report. Include % just show the same information in percentage form e.g. 34 % of the agencies include summary in Swedish in their annual report. There are also Mean, Min and Max information concering the PAGES and TOTAL variables.

No	Item	Explanation	Include	Include%	Mean	Min	Max
		Common Items					
1	**PAGES**	Annual report's number of pages	2639	-	36	10	118
2	**SWEDISH**	Summary in Swedish	24	34 %	-	-	-
3	**ENGLISH**	Summary in English	15	21 %	-	-	-
4	**OTHERLAN**	Summary in any other language	0	0 %	-	-	-
5	**VALUES**	Agency's values	22	31 %	-	-	-
6	**MISSION**	Agency's mission	50	71 %	-	-	-
7	**CHART**	Organization chart	50	71 %	-	-	-
8	**PAPER**	Size of the paper	50	71 %	-	-	-
		Economic Items					
9	**ECOPAGES**	Economic pages / review	40	57 %	-	-	-
10	**ECOREV**	Statement of revenues & expenses	30	43 %	-	-	-
11	**ECOBAL**	Balance sheet	25	36 %	-	-	-
12	**ECOBUD**	Statement of budget's realization	5	7 %	-	-	-
13	**ECOVALFM**	Value for money reporting	13	19 %	-	-	-
14	**ECOTARG**	Targets & results of year 2002	16	23 %	-	-	-
15	**ECORISKS**	Risks & risk management	1	1 %	-	-	-
16	**ECOCTRL**	Internal control issues	5	7 %	-	-	-
17	**ECOOPER**	Chargeable operations reporting	20	29 %	-	-	-
		Social Items					
18	**SOCPAGES**	Personnel pages / review	52	74 %	-	-	-
19	**SOCAGE**	Breakdown of workforce by age	38	54 %	-	-	-
20	**SOCGEN**	Breakdown of workforce by gender	28	40 %	-	-	-
21	**SOCEDU**	Breakdown (bd) of workforce by educational background	29	41 %	-	-	-
22	**SOCCONT**	Bd of workforce by type of employment contract	26	37 %	-	-	-
23	**SOCABS**	Absentee rates of employees	10	14 %	-	-	-
24	**SOCTRAIN**	Personnel training	20	29 %	-	-	-
		Environment Items					
25	**ENVPAGES**	Environment pages / review	4	6 %	-	-	-
26	**WASTE**	Amount of waste	0	0 %	-	-	-
		Other					
N/A	**PAGESMED**	Value zero (0) if below median of PAGES, otherwise one (1).	32	48 %	-	-	-
N/A	**TOTAL**	Sum of all items (index score)	-	-	8	0	17

Total Number of Items	26
Total Number of Items Used in Previous Studies	19
Maximum Possible Score	24

Table 13 show all ministries and agencies and the respective scores from the PSD – Index. Table 10 below show the five best reporters when using the self made Public Sector Disclosure Index as a measure of the disclosure level in the annual reports of Finnish government agencies.

Table 10: Top Five High Score Agencies

Table 10 shows the five agencies which score the best results. As mentioned earlier the the possible maximum score from the index is 24. (* Only web version of annual report).

No	Agency	Ministry	Score	Score%
1	The Finnish Vehicle Administration AKE	Ministry of Transport and Communications Finland	17	71 %
2	The Criminal Sanctions Agency	Ministry of Justice Finland	16	67 %
3	University of Vaasa*	Ministry of Education	15	63 %
4	Finnish Communications Regulatory Authority	Ministry of Transport and Communications Finland	15	63 %
5	The Finnish Meteorological Institute	Ministry of Transport and Communications Finland	15	63 %

Common Items (8). Three government agencies[58] publish the total annual report in Finnish, English & Swedish at the same time and two agencies[59] publish the report only in Swedish without any summaries in Finnish. Four agencies[60] out of total 70 publish only a web-report.

Economic Items (9). ECOPAGES is the first item and it seems that only one agency, Sibelius Academy includes its regulatory financial statement[61] in the annual report. Discussion about the so called value for money issues (ECOVAL4M), in most cases is just a short mention usually in the management review without any further analyses. Agencies' targets and results (ECOTARG) were not reported in very clear way. Usually there was just a comment in the management review that the goals were mainly reached without any specifications and further analyses.[62] ECORISKS which is the risk management reporting item received value one only once.[63] Quite many of the agencies discussed about the problem of recruiting talented people in the future but did not seen that as a risk. There was also some discussion about dumpsters, lack of resources, etc. but as whole the reporting about risks and risk management in the annual reports were very thin.

Environment Items (2). It seems that only four agencies[64] out of total 70 include environmental pages (ENVPAGES) in order to score value one from this item. However, there were discussion about the following topics in few annual reports; damages of ground water, land in general, one agency also mention the research it does about sustainability development but nothing about the agency's own impact on environment, there was also discussion about the development of environmental accounting but again nothing about that

[58] Finnish Communications Regulatory Authority, Theatre Academy of Finland and State Treasury of Finland.
[59] Åbo Akademi University and Swedish School of Economics and Business Administration.
[60] The Finnish Security Police, State Treasury of Finland, University of Vaasa and University of Jyväskylä.
[61] Hallituksen hyväksymä toimintakertomus
[62] Good examples; The Criminal Sanctions Agency, Finnish Customs, The Finnish Vehicle Administration AKE and Finnish Maritime Admistration.
[63] Employment and Economic Development Centre for Pirkanmaa
[64] The Finnish Road Administration, Finnish Rail Administration, Finnish Maritime Admistration and University of Vaasa.

specific organization's impact, sustainability development in general and one agency is going to launch the sustainability development strategy.

5.5. DETERMINANTS OF DISCLOSURE LEVEL IN PUBLIC SECTOR ANNUAL REPORTS

The third objective of this thesis was to find out whether there are differences between the agencies' disclosure level in the annual reports and what factors might explain those differences i.e. are there any associations between agency characteristics and disclosure levels in Finnish government agencies' annual reports?

5.5.1. Correlation Analyses between the PSD-Index Score and Explanatory Variables

Table 11 show the correlations between the TOTAL variable and the explanatory variables hypothesized to affect the disclosure level in annual report. In this case both the non – parametric Spearman's correlation and the parametric Pearson's correlation are supposed to be informative i.e. the results support each other.[65] And again SUBLEDGR is excluded from the following multivariate regression analysis due to the high correlation with SYSPROV and because SYSPROV seems to be more efficient explanatory variable it is chose instead of SUBLEDGR. TOTALOG is calculated as follows: LOG [X (1-X)], where X is TOTAL divided by the maximum score of 24. In other words, TOTALOG is a continuous variable but there are also problems with the normality of the TOTALOG and even the regression analysis assumes that the independent variable should be continuous variable this study uses the TOTAL as independent variable even the values are restricted between 0 and 24.

The following explanatory variables have significant (at least 10% level) positive both Spearman and Pearson correlations with TOTAL variable; LNLIABS, TRANSCOM, FINANCE and AUACTIO. The following two explanatory variables have significant (at least 10% level) negative both Spearman and Pearson correlations with TOTAL variable; DEBT and TRADE. See table 11 for more information. Botosan (1997) argues that the disclosure index is valid when it correlates with firm characteristics such as firm size and leverage which are identified in prior research to be associated with disclosure level. According to this assumption of Botosan (1997) the specific PSD – Index of this study is valid i.e. there is

[65] However, TOTAL is not a continuous variable because it could have only values between 0 and 24.

significant positive correlation between the TOTAL and LNLIABS.[66] The number of observations in the correlation analyses varies from 47 to 70 because of the missing values.

Table 11: Correlations of Variables Hypothesized to Affect the Disclosure Level

Pearson's correlation (parametric) is in the upper diagonal and Spearman's correlation (non-parametric) is in the lower diagonal. All the coefficients significant at least at 10% level are highlighted. All the correlation tests are two-tailed tests. Number of observations varies from 47 to 70. The coefficients significant at least at 10% level are highlighted. TOTAL is the total score from the PSD-Index, BUSINC is a sum of all the income from market prized actions which is divided by total income, LNLIABS is a natural logarithm of the liabilities of the respective agency, DEBT is a sum of all the debt of the respective agency which is divided by total assets, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the Ministry of Agriculture & Forestry, EDUCAT is the Ministry of Education, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, FINANCE is the Ministry of Finance, LOCATION is a dummy variable which receives value one (1) if the agency is located in Helsinki-Espoo-Vantaa metropolitan area & otherwise Zero (0), SUBLEDGER is just a total amount of different sub ledgers in the agency, SYSPROV is just a total amount of different system (accounting & human resources) providers of the specific agency, SYSMGMT is a dummy variable which receives value one (1) if all or more than half of the agency's systems (accounting & HR) are managed by a third party (e.g. service center) & otherwise zero (0), AUACTIO receives value one (1) if the agency is ordered by the State Audit Office (in the audit report) to take actions concerning its internal control, financial statement, cost accounting, etc., & otherwise zero (0), PAGES is just a total amount of pages in the annual report, PAGESMED receives value one (1) if amount of pages is above the median of the total amount of pages (32) & otherwise zero (0). TOTALOG is calculated as follows: LOG (X (1-X)), where X is TOTAL divided by the maximum score (24).

	1	2	3	4	5	6	7	8	9
1-TOTAL		0,0384	0,2368	-0,2458	-0,2794	0,3489	0,0942	-0,1145	-0,1242
Sig. (2-tailed)		0,7526	**0,0484**	**0,0403**	**0,0192**	**0,0031**	0,4381	0,3455	0,3057
2-BUSINC	0,0499		-0,2389	0,2767	0,3055	-0,1625	-0,0988	0,1122	-0,3050
Sig. (2-tailed)	0,6815		**0,0464**	**0,0204**	**0,0101**	0,1789	0,4159	0,3551	**0,0102**
3-LNLIABS	0,2025	-0,1513		-0,4180	-0,5051	0,3569	0,0397	0,1266	-0,0100
Sig. (2-tailed)	**0,0928**	0,2112		**0,0003**	**0,0000**	**0,0024**	0,7439	0,2962	0,9344
4-DEBT	-0,2219	0,1313	-0,6663		0,5665	-0,1766	-0,1590	-0,2967	-0,1394
Sig. (2-tailed)	**0,0649**	0,2786	0,0000		**0,0000**	0,1435	0,1885	**0,0126**	0,2497
5-TRADE	-0,2787	0,2551	-0,5353	0,4226		-0,2108	-0,1936	-0,4000	-0,2108
Sig. (2-tailed)	**0,0195**	**0,0331**	**0,0000**	**0,0003**		**0,0798**	0,1082	**0,0006**	**0,0798**
6-TRANSCOM	0,3228	-0,1638	0,2769	-0,3170	-0,2108		-0,1021	-0,2108	-0,1111
Sig. (2-tailed)	**0,0064**	0,1754	**0,0203**	**0,0075**	**0,0798**		0,4005	**0,0798**	0,3598
7-AGRIFOR	0,1305	-0,0556	0,0682	-0,2223	-0,1936	-0,1021		-0,1936	-0,1021
Sig. (2-tailed)	0,2816	0,6478	0,5749	**0,0644**	0,1082	0,4005		0,1082	0,4005
8-EDUCAT	-0,1256	0,1549	0,2254	-0,2019	-0,4000	-0,2108	-0,1936		-0,2108
Sig. (2-tailed)	0,3001	0,2003	**0,0607**	**0,0937**	**0,0006**	**0,0798**	0,1082		**0,0798**
9-INTERIOR	-0,0993	-0,3382	-0,0295	-0,0766	-0,2108	-0,1111	-0,1021	-0,2108	
Sig. (2-tailed)	0,4134	**0,0042**	0,8087	0,5285	**0,0798**	0,3598	0,4005	**0,0798**	
10-SOCIAL	0,0852	0,0170	-0,0340	0,1061	-0,1085	-0,0572	-0,0525	-0,1085	-0,0572
Sig. (2-tailed)	0,4833	0,8891	0,7802	0,3820	0,3714	0,6383	0,6659	0,3714	0,6383
11-FINANCE	0,2107	-0,1167	0,1167	0,2841	-0,1754	-0,0925	-0,0849	-0,1754	-0,0925
Sig. (2-tailed)	**0,0800**	0,3361	0,3361	**0,0171**	0,1464	0,4465	0,4846	0,1464	0,4465
12-LOCATION	0,1529	-0,2567	0,3045	-0,1940	-0,1389	0,2246	0,0550	-0,2469	-0,0481
Sig. (2-tailed)	0,2841	**0,0690**	**0,0298**	0,1725	0,3311	0,1131	0,7012	**0,0806**	0,7373
13-SUBLEDGR	0,0739	-0,0484	0,3211	0,1134	-0,1207	0,0238	-0,1964	0,0286	-0,0652
Sig. (2-tailed)	0,5713	0,7110	**0,0116**	0,3843	0,3540	0,8555	0,1293	0,8270	0,6174
14-SYSPROV	0,1189	0,1682	0,2543	0,0758	0,0000	0,0930	-0,1240	0,0420	-0,2303
Sig. (2-tailed)	0,3614	0,1950	**0,0480**	0,5616	1,0000	0,4758	0,3409	0,7480	**0,0742**
15-SYSMGMT	0,0451	-0,3792	0,4272	-0,3552	-0,3897	0,1096	0,1096	0,0242	0,1321
Sig. (2-tailed)	0,7320	**0,0028**	**0,0007**	**0,0053**	**0,0021**	0,4046	0,4046	0,8545	0,3144
16-AUACTIO	-0,3270	0,2098	-0,0375	0,1169	0,1291	0,0484	-0,1037	0,1333	-0,2420
Sig. (2-tailed)	**0,0065**	0,0860	0,7617	0,3425	0,2941	0,6951	0,4001	0,2784	**0,0468**
17-PAGES	0,5288	-0,0841	0,2085	-0,2283	-0,3005	0,0737	0,1467	0,1537	-0,1384
Sig. (2-tailed)	**0,0000**	0,5021	**0,0930**	**0,0652**	**0,0142**	0,5566	0,2397	0,2179	0,2677
18-PAGESMED	0,5327	-0,0597	0,1448	-0,2053	-0,2439	-0,0388	0,2205	0,1547	-0,0959
Sig. (2-tailed)	**0,0000**	0,6341	0,2460	**0,0982**	**0,0485**	0,7572	**0,0752**	0,2148	0,4438
19-TOTALOG	0,9067	0,0442	0,1922	-0,2937	-0,2694	0,1830	0,2169	-0,1089	0,0026
Sig. (2-tailed)	**0,0000**	0,7183	0,1137	**0,0143**	**0,0252**	0,1323	**0,0735**	0,3732	0,9831

Number of Observations Varies from 47 to 70

[66] The sign of the correlation between the TOTAL and DEBT is wrong. The further analysis can be found from section 5.6. and chapter six.

Table 11: (Cont'd) Correlations of Variables Hypothesized to Affect the Level of Disclosed Information

	10	11	12	13	14	15	16	17	18	19
1-TOTAL	0,0882	0,2116	0,1356	0,1295	0,1393	0,0606	-0,3373	0,4758	0,5338	0,7721
Sig. (2-tailed)	0,4676	**0,0787**	0,3427	0,3200	0,2843	0,6454	**0,0049**	**0,0001**	**0,0000**	**0,0000**
2-BUSINC	0,0591	-0,1392	-0,2058	-0,0562	0,1075	-0,4024	0,2135	0,0247	-0,0684	0,0284
Sig. (2-tailed)	0,6272	0,2506	0,1474	0,6672	0,4098	**0,0014**	**0,0804**	0,8437	0,5853	0,8165
3-LNLIABS	-0,0302	0,1374	0,3528	0,2689	0,1361	0,4039	-0,0102	0,1024	0,0883	0,3142
Sig. (2-tailed)	0,8043	0,2567	**0,0111**	**0,0361**	0,2958	**0,0014**	0,9344	0,4134	0,4809	**0,0086**
4-DEBT	-0,0547	0,1818	-0,3963	0,1819	0,0569	-0,5138	0,3121	-0,3612	-0,4212	-0,2142
Sig. (2-tailed)	0,6527	0,1321	**0,0040**	0,1605	0,6630	**0,0000**	**0,0096**	**0,0029**	**0,0004**	**0,0772**
5-TRADE	-0,1085	-0,1754	-0,1389	-0,0992	-0,0488	-0,3897	0,1291	-0,2510	-0,2439	-0,3471
Sig. (2-tailed)	0,3714	0,1464	0,3311	0,4469	0,7091	**0,0021**	0,2941	**0,0421**	**0,0485**	**0,0035**
6-TRANSCOM	-0,0572	-0,0925	0,2246	0,0369	0,0992	0,1096	0,0484	0,0771	-0,0388	0,1819
Sig. (2-tailed)	0,6383	0,4465	0,1131	0,7775	0,4468	0,4046	0,6951	0,5381	0,7572	0,1347
7-AGRIFOR	-0,0525	-0,0849	0,0550	-0,1562	-0,1552	0,1096	-0,1037	0,0358	0,2205	0,1353
Sig. (2-tailed)	0,6659	0,4846	0,7012	0,2294	0,2324	0,4046	0,4001	0,7751	**0,0752**	0,2675
8-EDUCAT	-0,1085	-0,1754	-0,2469	0,0022	0,1167	0,0242	0,1333	0,1374	0,1547	-0,0422
Sig. (2-tailed)	0,3714	0,1464	**0,0806**	0,9865	0,3705	0,8545	0,2784	0,2714	0,2148	0,7307
9-INTERIOR	-0,0572	-0,0925	-0,0481	-0,0903	-0,2019	0,1321	-0,2420	-0,1405	-0,0959	0,0864
Sig. (2-tailed)	0,6383	0,4465	0,7373	0,4890	0,1187	0,3144	**0,0468**	0,2606	0,4438	0,4802
10-SOCIAL		-0,0476	0,1243	0,0790	-0,0557	0,0675	0,0000	0,0419	0,0054	0,0867
Sig. (2-tailed)		0,6958	0,3849	0,5451	0,6700	0,6084	1,0000	0,7381	0,9659	0,4787
11-FINANCE	-0,0476		0,1538	0,3658	0,1115	0,0971	-0,0563	0,0662	0,1348	0,1572
Sig. (2-tailed)	0,6958		0,2813	**0,0037**	0,3922	0,4603	0,6481	0,5977	0,2807	0,1970
12-LOCATION	0,1243	0,1538		-0,0489	-0,1997	0,2176	-0,0152	0,3623	0,3843	0,0386
Sig. (2-tailed)	0,3849	0,2813		0,7333	0,1599	0,1291	0,9176	**0,0123**	**0,0077**	0,7903
13-SUBLEDGR	0,1380	0,3017	0,0243		0,7306	-0,0511	0,0051	-0,0571	-0,1024	0,1166
Sig. (2-tailed)	0,2889	**0,0181**	0,8658		0,0000	0,6984	0,9697	0,6731	0,4484	0,3751
14-SYSPROV	-0,0519	0,1375	-0,0860	0,7340		-0,0174	0,0372	0,0883	-0,0816	0,0392
Sig. (2-tailed)	0,6914	0,2908	0,5483	**0,0000**		0,8948	0,7799	0,5134	0,5462	0,7660
15-SYSMGMT	0,0675	0,0971	0,2176	-0,0243	-0,0484		-0,3970	0,0502	0,1895	0,0075
Sig. (2-tailed)	0,6084	0,4603	0,1291	0,8536	0,7132		**0,0020**	0,7133	0,1619	0,9551
16-AUACTIO	0,0000	-0,0563	-0,0152	-0,0010	-0,0229	-0,3970		-0,1085	-0,2189	-0,1713
Sig. (2-tailed)	1,0000	0,6481	0,9176	0,9939	0,8633	**0,0020**		0,3932	**0,0823**	0,1656
17-PAGES	0,0929	0,1151	0,4211	-0,1027	-0,0662	0,1705	-0,1634		0,6921	0,2797
Sig. (2-tailed)	0,4583	0,3575	**0,0032**	0,4470	0,6247	0,2090	0,1971		**0,0000**	**0,0229**
18-PAGESMED	0,0054	0,1348	0,3843	-0,0759	-0,0570	0,1895	-0,2189	0,8664		0,4093
Sig. (2-tailed)	0,9659	0,2807	**0,0077**	0,5746	0,6739	0,1619	**0,0823**	**0,0000**		**0,0006**
19-TOTALOG	0,0938	0,1920	0,1649	-0,0042	-0,0257	-0,0170	-0,1863	0,4775	0,4818	
Sig. (2-tailed)	0,4434	0,1141	0,2525	0,9748	0,8457	0,8980	0,1311	**0,0001**	**0,0000**	

Number of Observations Varies from 47 to 70

5.5.2. Multivariate Regression Analyses

Finally the main analysis of the third objective of this thesis is introduced. Multivariate or multiple regression analysis is just an extension of simple regression analysis to cover cases in which the dependent variable is hypothesized to depend on more than one explanatory variable. Again there is the problem of discriminating between the effects of different explanatory variables but it seems that multicollinearity is not problem in this case even there

are correlations among explanatory variables.[67] Four regression models are built to test the hypotheses introduced in chapter four.

The first multivariate regression logistic model contains all the 14 explanatory variables. Table 12 shows all the details of the first model and the in depth analysis can be found from section 5.6. and in chapter six.

$$TOTAL_4 = \beta_1 + \beta_2 BUSINC + \beta_3 LNLIABS + \beta_4 DEBT + \beta_5 TRADE + \beta_6 TRANSCOM + \beta_7 AGRIFOR + \beta_8 EDUCAT + \beta_9 INTERIOR + \beta_{10} SOCIAL + \beta_{11} FINANCE + \beta_{12} LOCATION + \beta_{13} SYSPROV + \beta_{14} SYSMGMT + \beta_{15} AUACTIO \quad (4)$$

The second model contains only the six explanatory variables which correlations with TOTAL variable were the most significant ones.

$$TOTAL_5 = \beta_1 + \beta_2 LNLIABS + \beta_3 DEBT + \beta_4 TRADE + \beta_5 TRANSCOM + \beta_6 FINANCE + \beta_7 AUACTIO \quad (5)$$

The third model contains only the two explanatory variables in order to test only hypotheses two and seven.

$$TOTAL_6 = \beta_1 + \beta_2 LNLIABS + \beta_3 AUACTIO \quad (6)$$

The fourth and last model contains only the variables which were also significant in the first model.

$$TOTAL_7 = \beta_1 + \beta_2 TRANSCOM + \beta_3 AUACTIO \quad (7)$$

[67] The multicollinearity is not a problem among the explanatory variables of this paper. SPPS reports that the VIF values of every explanatory variable are under 10 and the Condition Index values are also under 30 except in the case AUACTIO variable which receives Condition Index value of 36. See also tables 12 and 13.

Table 12: Multivariate Regression Analyses

All the coefficients significant at least at 10% level are highlighted. The dependent variable is TOTAL which is the total score from the PSD-Index, TOTALOG is calculated as follows: LOG (X (1-X)), where X is TOTAL divided by the maximum score (24), BUSINC is a sum of all the income from market prized actions which is divided by total income, LNLIABS is a natural logarithm of the liabilities of the respective agency, DEBT is a sum of all the debt of the respective agency which is divided by total assets, TRADE is the Ministry of Trade & Industry, TRANSCOM is the Ministry of Transport & Communications Finland, AGRIFOR is the Ministry of Agriculture & Forestry, EDUCAT is the Ministry of Education, INTERIOR is the Ministry of the Interior, SOCIAL is the Ministry of Social Affairs & Health, FINANCE is the Ministry of Finance, LOCATION is a dummy variable which receives value one (1) if the agency is located in Helsinki-Espoo-Vantaa metropolitan area & otherwise Zero (0), SYSPROV is just a total amount of different system (accounting & human resources) providers of the specific agency, SYSMGMT is a dummy variable which receives value one (1) if all or more than half of the agency's systems (accounting & HR) are managed by a third party (e.g. service center) & otherwise zero (0), AUACTIO receives value one (1) if the agency is ordered by the State Audit Office (in the audit report) to take actions concerning its internal control, financial statement, cost accounting, etc., & otherwise zero (0).

Dependent variable: Disclosure Index Score (TOTAL)									
		Model (4)		Model (5)		Model (6)		Model (7)	
Independent vars.	**Exp. sign**	**Coeff.**	**Sig.**	**Coeff.**	**Sig.**	**Coeff.**	**Sig.**	**Coeff.**	**Sig.**
CONSTANT	+/-	13,2122	**0,0379**	9,3132	**0,0089**	3,5385	0,2244	8,9901	**0,0000**
H1: Competition									
BUSINC	+	3,3361	0,1931	-	-	-	-	-	-
H2: Size									
LNLIABS	+	-0,0336	0,8990	-0,0168	0,9362	0,3695	**0,0407**	-	-
H3: Leverage									
DEBT	+	-0,0745	0,6698	-0,0759	0,5243	-	-	-	-
H4: Ministry									
TRADE	+/-	-2,2243	0,3791	-0,9228	0,4694	-	-	-	-
TRANSCOM	+/-	4,5191	**0,0933**	0,5422	**0,0040**	-	-	4,7793	**0,0013**
AGRIFOR	+/-	-0,2003	0,9417	-	-	-	-	-	-
EDUCAT	+/-	-1,5835	0,5102	-	-	-	-	-	-
INTERIOR	+/-	-2,5904	0,3527	-	-	-	-	-	-
SOCIAL	+/-	1,1561	0,7268	-	-	-	-	-	-
FINANCE	+/-	3,8218	0,2193	3,4128	**0,0658**	-	-	-	-
H5: Location									
LOCATION	+	-0,1061	0,9465	-	-	-	-	-	-
H6: Internal Systems									
SYSPROV	+	0,1691	0,7045	-	-	-	-	-	-
SYSMGMT	+	-4,1253	0,1050	-	-	-	-	-	-
H7: Audit Report									
AUACTIO	-	-2,9934	**0,0148**	-2,3926	**0,0112**	-2,6866	**0,0043**	-2,8465	**0,0016**
Number of observations			47		67		67		67
F-Statistic			2,0554		4,7893		6,6334		10,5254
Significance of the F			0,0442		0,0005		0,0024		0,0001
Adjusted R-Square			0,2392		0,2534		0,1440		0,2214

All the models are statistically significant at least at 5% level but the best model seems to be number five if adjusted R-Square is used as a basis. Consistent with study's expectations, it seems that it is more likely to voluntary disclose more information in the annual report among agencies which; (H2) are large, (H4) are under management of certain ministries (Ministry of Transport and Communications Finland, Ministry of Finance) and (H7) are not ordered by the State Audit Office to take any actions concerning its accounting or other procedures.

However, inconsistent with study's expectations, it seems that, determinants such as (H1) competition or degree of business operations; (H3) leverage; (H5) location; and (H6) internal systems do not affect the disclosure level in annual report. The more thorough analysis of hypotheses and other results of the third objective (Association between Characteristics and Disclosure level) of this thesis can be found in next section.

5.6. SUMMARY, RESULTS AND INFERENCES FROM EMPIRICAL ANALYSES

All the main analyses, interpretations and inferences of the results of the empirical analyses take place in this section and in chapter six. All seven hypotheses are repeated and discussed separately in order of clarity. Obviously, other interesting finding relevant for the topic is also discussed and the second objective of this study, current disclosure level in annual reports is shortly analysed, as well. However, other interesting but not relevant relationships such as negative and significant correlation at <5% level between the LOCATION and BUSINC variables can be found from correlation tables.

H1: Competition. The more an agency does business with its stakeholders (& others), the more it will face competition, the more likely it will publish an annual report and the more it wills disclose information about itself. Explanatory variable BUSINC's means and medians differ statistically significantly at <1% level between the two groups.[68] Both Spearman and Pearson correlations between the PUBLISH and BUSINC variables are positive and statistically significant at <1% level. As an independent variable in the binary logistic regression the variable is positive and statistically significant at <5% level in both models two and three. It seems that consistent with study's expectations, it is more likely to publish an annual report among agencies which do business with their stakeholders. This is not based on any theory but still, following reasons might explain the result; agencies which do serious business have larger amount of stakeholders to be informed about their actions, they also might have more business oriented management who support such action like publishing an annual report, besides they might compete against private sector companies which means that they must be more transparent about their prize setting, cost accounting and subsidies from government, etc. and at last, agencies might publish an annual report for marketing reasons.

[68] 70 agencies published an annual report of year 2002 and 47 agencies did not publish an annual report.

However, inconsistent with study's expectations, it seems that, determinants such as competition or degree of business operations does not affect the disclosure level in annual report due to the insignificancy of BUSINC variable both in correlation analyses and multiple regression analyses. Also Eliasson and Olofsson (2002) find it as an insignificant explanatory variable. One reason for this can be that the PSD – Index could not measure the disclosure level efficiently and precisely which is not likely because the validity of the index is already proved in section 5.5.1. It is also possible that BUSINC could explain the financial disclosure separately but as mentioned earlier the sections in the PSD – Index won't be analyzed singly, for example in the correlation of regression analyses.[69]

H2: Size. Large agencies are more likely to publish an annual report and voluntary disclose more information in the annual report. Due to the insignificancy of LNLIABS variable in t-test, Mann-Whitney test, correlation analyses and binary regression analyses it seems that inconsistent with study's expectations, determinants such as size of the agency does not affect the likelihood of publishing an annual report. This has not been tested in any previous studies, in author's knowledge. However, consistent with study's expectations, it seems more likely to voluntary disclose more information in the annual report among agencies which are large. This is based on both Spearman and Pearson correlations between the TOTAL and LNLIABS variables which are positive and statistically significant at <10% level. As an independent variable in the multiple regression the variable is positive and statistically significant at <5% level in model number six. This is very usual result in previous studies discussed earlier and it is based on political costs and agency costs arguments that larger organizations are more likely to disclose more information to users of annual reports. Even though it is unclear what size proxies but obviously, it seems that size does not proxy, for example resources or scale to product an annual report.[70]

H3: Leverage. Leveraged agencies are more likely to publish an annual report and voluntarily disclose more information in the annual report. Due to the insignificancy of DEBT variable in t-test, Mann-Whitney test, correlation analyses and binary regression analyses it seems that inconsistent with study's expectations, determinants such as leverage of

[69] TOTAL and TOTALOG have already problems with string requirements of the regression analysis. The problems would be even more severe if the sections are analyzed separately.
[70] If size would proxy, for example agency's resources to product an annual report then correlation between the PUBLISH and LNLIABS variables would be significant.

the agency does not affect the likelihood of publishing an annual report. This has not been tested in any previous studies, in author's knowledge.

Also, inconsistent with study's expectations, it seems that, determinants such as leverage of the agency do affect the disclosure level in annual report but the direction of the effect is wrong. Both Spearman and Pearson correlations between the TOTAL and DEBT variables are negative (which is not what hypothesized) and statistically significant at <10% level. As an independent variable in the univariate regression the DEBT variable is negative and statistically significant at <10% level.[71] Agency theory predicts that more highly leveraged firms incur more monitoring costs and they seek to reduce these costs by disclosing more information in annual reports, whereas Meek and Co. (1995) report that lower levered firms do and Ahmed and Courtis (1999) document that it is inconclusive and the results of this study do nor support the agency theory argument. The DEBT variable this thesis uses contains only short term debt which in case might affect the results.[72] This whereas, might mean that agencies which disclose less information do not "clean" short term debt such as account payables out of their balance sheets at the end of the year.

H4: Ministry. Agencies under management of certain ministries are more likely to publish an annual report and voluntary disclose more information in the annual report. TRANSCOM, AGRIFOR and EDUCAT as independent variables in binary regression analysis are all positive and statistically significant at <10% level only in model one. Based on this analysis it is consistent with study's expectation that it is more likely to publish an annual report among agencies which are under management of certain ministries such as Ministry of Transport and Communications Finland, Ministry of Agriculture and Forestry and Ministry of Education.[73] This has not been tested in any previous studies, in author's knowledge but following reasons might explain the result; it is possible that under management of Ministry which is responsible for communication, etc., it is more likely that agencies publish an annual report because of the Ministry's area of function, agriculture sector is quite important in Finland which in case might explain the eagerness to publish an annual report and Universities, etc. are fore runners also in matter of publishing an annual report.

[71] TOTAL as a dependent variable and only one independent variable; DEBT.
[72] For more information, see Meklin (2002).
[73] See also results from the CHI-Square analysis and correlation analyses from tables four, five and sic due to the fact that results differ but because the binary regression analysis is more powerful than the CHI-Square or correlation analyses the binary regression results are assumed to be the "right" ones.

TRANSCOM and FINANCE as independent variables in multiple regression analysis are both positive and statistically significant at <10% level only in model five. Based on this analysis it is consistent with study's expectation that it is more likely to voluntary disclose more information in the annual report among agencies which are under management of certain ministries like Ministry of Transport and Communications Finland and Ministry of Finance.[74] Verrecchia (1983) find out that political costs vary also across industries and Eliasson & Olofsson (2002) use ministry as a determinant of disclosure level and find it to be a significant one which again mean that there are both theoretical and empirical support for the results. Although, also following reasons might explain the result; again it is possible that under management of Ministry which is responsible for communication, etc., it is encouraged that agencies disclose as much information as possible and agencies under management of Ministry of Finance are all very dependent on information and they are also producing lot of information by them own.

H5: Location. Agencies located in Helsinki - Vantaa - Espoo metropolitan area are more likely to publish an annual report and voluntary disclose more information in the annual report. Due to the insignificancy of LOCATION variable in the CHI-Square test, correlation analyses and binary regression analyses it seems that inconsistent with study's expectations, determinants such as location of the agency does not affect the likelihood of publishing an annual report. This has not been tested in any previous studies, in author's knowledge. Also, due to the insignificancy of LOCATION variable in correlation analyses and multiple regression analyses it seems that inconsistent with study's expectations, determinants such as location of the agency does not affect the disclosure level in annual report. Nevertheless, Meek and Co. (1995) find country and region of origin variables to be significant ones when they hypothesize that political costs are also likely to vary across nations, given that reflect cultural and social norms. Eliasson & Olofsson (2002) also use the location of the government agency as an explanatory variable but find it as insignificant. This thesis neither did find any support for political costs which possibly varies across regions.[75]

H6: Internal Systems. The number of different accounting systems increase, the amount of different system providers and outsourcing of system management increase the likelihood of

[74] See also results correlation analyses from tables 12 and 13 due to the fact that results differ but because the multiple regression analysis is more powerful than correlation analyses, the multiple regression results are assumed to be the "right" ones.
[75] However, there is a positive and significant at <5% level correlation between variables LOCATION and PAGES.

publishing an annual report and the level of voluntary disclosed information in the annual report. Explanatory variable SYSPROV's means and medians differ statistically significantly at <1% level between the two groups and according to the CHI-Square test the frequencies of SYSMGMT variable differ also statistically significantly at <5% level. Both Spearman and Pearson correlations between the PUBLISH variable and explanatory variables above are positive and statistically significant at <1% level. As an independent variable in the binary logistic regression the variables are positive and statistically significant at <10% level in all the three models. It seems that consistent with study's expectations, it is more likely to publish an annual report among agencies which have many different system providers and have outsourced their system management. This is not based on any theory but still, following reasons might explain the association between SYSPROV and PUBLISH variables; it is possible that agencies which have many different system providers may have also better or at least more flexible reporting systems and environments in order to produce a report such as annual report, they also might be more interested in the condition of their reporting system e.g. if the agency notice that they can't get some specific information from the current systems they will find a system provider and systems which can and many system providers also mean many contact persons with specific knowledge about accounting and other kind of information systems who can help the agency for example, to improve their annual report production process. However, all of these hypothesized reasons are against the integrated and all-from-one system provider environment which in turn is obviously less complex, user friendly, etc. but still it is very interesting if the likelihood of publishing an annual report really is so dependent on the internal systems (such as amount of system / sub ledger providers or the possible management outsourcing of majority of the sub ledgers) of the agency.

Following reasons in turn, might explain the association between SYSMGMT and PUBLISH variables; outsourcing the system management to a third party is assumed to be the most cost efficient way to handle the systems which in turn might mean that accounting and communication departments have more resources to produce an annual report and a third party is usually a professional system manager which again mean that the system environment / internal systems might be in high quality condition i.e. the best practices are followed.

However, due to the insignificancy of SYSPROV and SYSMGMT variables in correlation analyses and multiple regression analyses it seems that inconsistent with studys's

expectations, determinants such as amount of different system providers or the management of systems do not affect the disclosure level in annual report. Again, there are no theories or empirical results to support this result either but it seems that when an agency has managed to publish an annual report (which really seems to be an internal systems dependent process) internal systems do not affect anymore the disclosure level in the annual reports.

H7: Audit Report. If the agency is ordered by the State Audit Office to take actions concerning its accounting procedures, etc., the more likely it won't publish an annual report and the more likely the level of voluntary disclosed information is low. Due to the insignificancy of AUACTIO variable in the CHI-Square test, correlation analyses and binary regression analyses it seems that inconsistent with study's expectations, determinants such as State Audit Office's orders of the agency does not affect the likelihood of publishing an annual report. Again, there are no theories or empirical results to support this result.

However, consistent with study's expectations, it seems that it is more likely to voluntary disclose more information in the annual report among agencies which are not ordered by the State Audit Office to take any actions concerning its accounting or other procedures. This is based on both Spearman and Pearson correlations between the TOTAL and AUACTIO variables which are negative as hypothesized and statistically significant at <1% level. As an independent variable in the multiple regression the variable is negative and statistically significant at <5% level in all models from four to seven. There are no theories or empirical results to support the result but it sounds reasonable that agencies which have problems for example, with their internal control or management procedures also disclose less information in the annual report.

The second objective of this thesis was to find out what is *the current level of both financial and non-financial information* in the annual reports of Finnish government agencies. No hypotheses were introduced because those would have been more or less speculative. However, the disclosure level in the annual reports varies a lot, to be exact from 0 to 17 out of the total possible score of 24. Readers could make their own analyses concerning the disclosure level based on information in section 5.4 and table 13.

6. SUMMARY AND DISCUSSION

During the past few years, approximately 60 % of all government agencies in Finland have published voluntary annual reports. Given the importance and recent trend towards increased disclosure in the public sector, the purpose of this study was threefold. The *first* goal was to find out factors that explain why some government agencies voluntarily publish annual report, whereas others do not. The *second* goal was to measure the disclosure level in the annual reports published by the agencies, i.e. what is the amount of financial and non-financial information conveyed by those reports. Finally, the *third* goal was to find out whether certain agency-related characteristics explain the cross-sectional variation of the disclosure level in the published annual reports. This study provides further evidence and confirms previous theories on the reasons behind voluntary disclosures in the public sector annual reports. In author's knowledge this thesis is also the first one which investigates the three objectives above. The following paragraphs discuss all hypotheses, limitations and possible future research in wider context and it also suggests how to utilize the finding of the thesis.

Consistent with expectations, the findings indicate that voluntary publishing an annual report is more likely among agencies which *(H1)* do business with their stakeholders. This is not based on any theory but still, following reasons might explain the result. Agencies which do serious business have larger amount of stakeholders to be informed about their actions, they also might have more business oriented management who support such action like publishing an annual report, besides they might compete against private sector companies which means that they must be more transparent about their prize setting, cost accounting and subsidies from government, etc. and at last, agencies might publish an annual report for marketing reasons i.e. the overall view taking and management of the agency might be the reason to publish such a report. However, the results confirm that Meklin's (2002) classification is very sound but in contrast to expectations, factor as competition or the degree of business operations is not associated with the disclosure level in the annual reports. Also Eliasson and Olofsson (2002) find this as an insignificant explanatory variable and one reason for this can be that the PSD – Index could not measure the disclosure level efficiently and precisely which however is not likely because the validity of the index is already proved in section 5.5.1. It is also possible that BUSINC could explain the financial disclosure separately. More research remains to be done but the fact is that public sector organizations are operating more and more like private sector companies and it seems that agencies' similarity with private sector

organizations increase the likelihood of publishing an annual report but do not affect the disclosure level in the report.

Nevertheless, the findings do not support the hypotheses that the likelihood of publishing a report is related to factors such as *(H2)* the size of an agency but in other hand the findings show that, consistent with expectations, the amount of information voluntarily disclosed in the reports is relatively high among agencies which are large. This thesis confirm the very usual result in previous studies discussed earlier which is based on political costs and agency costs arguments that larger organizations are more likely to disclose more information to users of annual reports. Even though it is unclear what size proxies, but obviously, it seems that size does not proxy resources or scale to product annual reports which were hypothesized in few previous studies. In other words, size does not matter in order to produce an annual report but it matters when disclosing the information in it, which partly indicate that agency costs and political costs arguments hold also when investigating public sector.

In contrast to expectations, factor such as *(H3)* leverage is not positively associated with the likelihood of publishing an annual report or the disclosure level in the annual reports published by the agencies even the agency theory predicts that more highly leveraged firms incur more monitoring costs and they seek to reduce these costs by disclosing more information in annual reports. However, Ahmed and Courtis (1999) document that empirical result are inconclusive and consistent with this study's results, Meek and Co. (1995) report that lower levered firms do. I.e. lower levered agencies seem to disclose more information in the annual reports which is reasonable because agencies do not have long term debt and no matter if they had due to the impossibility of bankruptcy which again means that there are no monitoring costs. In other words, agencies will always pay their debt and they do not have to confirm their short term borrowers about their good financial situation, strategy, personnel, etc., for example in the annual report. The negative association between the (short term) leverage and disclosure level might again indicate about the overall view taking and the management of the agency which is not an objective of the thesis.

Again, in line with expectations, the findings indicate that voluntary publishing an annual report and disclosing voluntarily more information in it, is more likely among agencies which *(H4)* are under management of certain ministries. Also Verrecchia (1983) find out that political costs vary also across industries and Eliasson & Olofsson (2002) use ministry as a

determinant of disclosure level and find it to be a significant one which means that there are both theoretical and empirical support for the results. Some ministries are just more transparent than others even the rules and regulations are quite the same for all the ministries. But again, the results might indicate about the overall view taking and the management of the ministry which is not an objective of the thesis. Nevertheless, some kind of management survey could possibly enlighten us in order to find out why agencies under some ministries are more likely to publish an annual report or voluntary disclose more information in it.

In contrast to expectations, factor such as *(H5)* location of the specific agency is not associated with the likelihood of publishing an annual report or the disclosure level in the annual reports published by the agencies. Nevertheless, Meek and Co. (1995) find country and region of origin variables to be significant ones when they hypothesize that political costs are also likely to vary across nations, given that reflect cultural and social norms. Eliasson & Olofsson (2002) also use the location of the government agency as an explanatory variable but find it as insignificant. This thesis neither did find any support for political costs argument which possibly varies across regions. In other words, agencies handle the disclosure issues in quite the same way, no matter the location i.e. Helsinki metropolitan area or another which sounds reasonable due to the fact that Finland is a small and homogeny country in matter of institutional or demographic factors.

Consistent with expectations, the findings indicate that voluntary publishing an annual report is more likely among agencies which *(H6)* have many different system providers or have outsourced their system management but in contrast to expectations, internal systems are not associated with the disclosure level of the annual reports published by the agencies. It is possible that agencies which have many different system providers may have also better or at least more flexible reporting systems and environments in order to produce a report such as annual report, they also might be more interested in the condition of their reporting system e.g. if the agency notice that they can't get some specific information from the current systems they will find a system provider and systems which can and many system providers also mean many contact persons with specific knowledge about accounting and other kind of information systems who can help the agency for example, to improve their annual report production process. However, all of these hypothesized reasons are against the integrated and all-from-one system provider environment which in turn is obviously less complex, user friendly, etc. but still it is very interesting if the likelihood of publishing an annual report

really is so dependent on the internal systems such as amount of system / sub ledger providers or the possible management outsourcing of majority of the sub ledgers. Outsourcing the system management to a third party is assumed to be the most cost efficient way to handle the systems which in turn might mean that accounting and communication departments have more resources to produce an annual report. A third party is usually a professional system manager which again mean that the system environment / internal systems might be in high quality condition i.e. the best practices are followed. In other words, thesis's results indicate that it is more likely to produce an annual report if the information needed in the report is easy to acquire but when the annual report is decided to produce, internal systems do not anymore affect the content or the disclosure level of the specific report.

The findings show that, consistent with expectations, the amount of information voluntarily disclosed in the reports is relatively high among agencies which *(H7)* are not ordered by the State Audit Office to take any actions concerning its accounting or other procedures. In contrast to expectations, the respective factor does not affect the likelihood of publishing an annual report. It sounds reasonable that agencies which have problems for example, with their internal control or management procedures also disclose less information in the annual report which means that the negative association really indicates about the overall view taking and the management of the agency. Of course research remains to be done but one can say that the quality of agencies' internal procedures really affects its external reporting and again it seems that agencies' external reporting is heavily determined by its internal structures.

The main benefit an agency or ministry can have from this study is obviously the analysis of its current disclosure level in the annual report which seems to vary quite heavily, as indicated by the minimum and maximum disclosure scores (0 and 17, respectively, out of the theoretical maximum 24). Even though the items in the PSD – Index were chosen by the author himself, they are very common in previous related studies and the Index can be expected to measure the disclosure level reliably. Using the index as a check list, agencies can easily benchmark their annual reports against other agencies, which is very important in order to improve external reporting, image management and accountability. Agencies can also discover the web-report-solutions of the agencies which published an annual report of the year 2002 only in the web.[76] Leppiniemi and Virtanen (2003, pp.80) state that "by reading and

[76] Only four agencies published an annual report of year 2002 only in the web; The Finnish Security Police, State Treasury of Finland, University of Vaasa and University of Jyväskylä.

getting familiar with annual reports of other organizations from different sectors and lines of businesses one can learn a lot and the least that an organization should do every year, is to benchmark its own annual report against the other major players in the same sector. It is worth to get both international and national benchmark-annual-reports and without a proper benchmarking it is not prudent to start a new annual report production process. It is also worth to discover carefully other organizations' web-annual-report-solutions." The characteristics affecting the likelihood of publishing an annual report and the determinants of disclosure level may be more interesting from an academic point of view. However, based on the results of this thesis, agencies might be more enthusiastic to rethink their internal processes which could have on impact on the annual report production process. Agencies can also benchmark their production process against other agencies and for example, find out is the willingness to publish an annual report determined by the internal reasons or external stakeholders' information needs?

Every piece of research has its shortcomings and the following limitations emerged during the process of this study. The first problem is common to all studies concerning the disclosure level in annual report which is the disclosure index method. The specific method is very time consuming, mistakes could arise during the scoring process and the subjectivity of the researcher could affect the results. Even, the PSD – Index of this study seems to be reliable and valid, mistakes could happen. Lack of previous studies relating to determinants of disclosure level in public sector annual reports weaken the theoretical and empirical foundations of this thesis. It is also noticed that disclosure level in public sector annual report does not necessarily correlate with other forms of disclosure like in private sector i.e. is annual report the best possible proxy for disclosure level in general also in public sector. There is also a possibility that contents of the year 2003's annual reports are significantly different compared to the year 2002. There are also some problems with statistical methods worth to mention. According to SPSS, regression models one and four have some signs about multicollinearity which however, appears not to be a problem. The dependent TOTAL variable in regression models four to seven is not a continuous variable even the multiple regression models assumes it should be. Some of the explanatory variables or independent variables also lack assumption of normality, which however, should not be a major problem. Despite the shortcomings analyzed above, the main results and analyzes are expected to be

reliable and valid. This can be assessed for example, by replicating the PSD – Index and comparing the results with the scores presented in previous empirical analyses.

Eliasson and Olofsson (2002) investigate whether the organization structure or processes or routines of the agency could explain the quality of disclosure in annual reports by analyzing the best and the bad reporters more thoroughly. This thesis finds strong evidence that the internal systems such as amount of accounting or HR system providers and outsourcing of system management affect the likelihood of publishing an annual report i.e. are the internal settings high quality enough to efficiently produce a report such as annual report? Based on these discoveries it would be interesting to see whether there are associations between the structures of the agencies' accounting or communications departments and the levels and qualities of external reporting such as annual reports. This can be done for example, by sending a questionnaire to all agencies and asking topics such as; amount of personnel, department's organizations chart, educational background of the personnel, budget of the communications or accounting department, do they use a project organization to produce an annual report, etc. The research design would be easier to fulfill with a sample of public sector agencies due to the easier access to the data needed but the results could possibly be applied to private sector as well.

What kind of information is the most highly valued by the buyers of Finnish government bonds or municipal bonds? This research setting can be done for example, by using the empirical framework conducted by Robbins and Austin (1986) i.e. sending an initial list of information items (deemed useful by municipal bond analysts) which is compiled from a review of the governmental accounting and finance literature and asking to score the items in order of its importance in decision making.

It would be also interesting to send a questionnaire such as Kohvakka (2000) to all the information users and providers of the Finnish government agencies with topics such as, internal and external stakeholders' estimated level of interest in annual reports in general and to be more specific the assumed interest level in items such as in the PSD – Index of this thesis. This kind of research would enlighten us about the information needs of public sector stakeholders who are not interested in the regulatory financial statements, balance sheets, statements of revenues and expenses, etc.

All the annual reports of almost all kind of entities are currently downloadable in electronic form from the web-pages of the respective agencies. It would be interesting to screen the data / text in the annual reports with a help of some kind word-processing programs, etc. Core (2001) also argued that these kinds of new research methods should be tried i.e. one student from Helsinki School of Economics and one from Helsinki University of Technology in order to write a master's thesis.

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APPENDICES

Table 13: Index Scores of all the Government Agencies of Republic of Finland

Table 13 shows all the ministries and Finnish government agencies. No is just a running number. Publish shows the agencies which publish an annual report and the ones that don't. Code is the government code for the respective agency.

No	Ministry / Agency	Code Tilivirasto	Publish	Score	Score%
	The President of the Republic of Finland / Tasavallan presidentti				
1	The President of the Republic of Finland	120 Tasavallan presidentin kanslia	No	-	-
	The Finnish Ministry of the Environment / Ympäristöministeriö				
2	Housing Fund of Finland	701 Valtion asuntorahasto	Yes	8	33 %
3	The Finnish Ministry of the Environment	700 Ympäristöministeriö	No	-	-
4	The Finnish Environment Institute	702 Suomen ympäristökeskus	No	-	-
	Prime Minister's Office / Valtioneuvosto				
5	Prime Minister's Office	125 Valtioneuvoston kanslia	No	-	-
	Parliament of Finland / Eduskunta				
6	Parliament of Finland	110 Eduskunta	No	-	-
7	State Audit Office	111 Valtiontalouden tarkastusvirasto	No	-	-
	Ministry of Transport and Communications Finland / Liikenne- ja viestintäministeriö				
8	The Finnish Road Administration	453 Tiehallinto	Yes	11	46 %
9	The Finnish Vehicle Administration AKE	454 Ajoneuvohallintokeskus	Yes	17	71 %
10	The Finnish Meteorological Institute	494 Ilmatieteen laitos	Yes	15	63 %
11	Finnish Communications Regulatory Authority	495 Viestintävirasto	Yes	15	63 %
12	Finnish Rail Administration	497 Ratahallintokeskus	Yes	10	42 %
13	Finnish Maritime Admistration	501 Merenkulkulaitoksen keskushallinto	Yes	7	29 %
14	Finnish Institute of Marine Research	508 Merentutkimuslaitos	Yes	10	42 %
15	Ministry of Transport and Communications Finland	450 Liikenne- ja viestintäministeriö	No	-	-
	Ministry of Trade and Industry / Kauppa- ja teollisuusministeriö				
16	Technical Research Centre of Finland	503 Valtion teknillinen tutkimuskeskus	Yes	10	42 %
17	The Geological Survey of Finland	504 Geologian tutkimuskeskus	Yes	9	38 %
18	The Finnish Tourist Board	506 Matkailun edistämiskeskus	Yes	3	13 %
19	National Board of Patents and Registration fo Finland	507 Patentti- ja rekisterihallitus	Yes	11	46 %
20	National Technology Agency of Finland	509 Teknologian kehittämiskeskus	Yes	9	38 %
21	Consumer Agency	512 Kuluttajavirasto	Yes	13	54 %
22	Centre for Metrology and Accreditation	514 Mittatekniikan keskus	Yes	3	13 %
23	National Consumer Research Centre	515 Kuluttajatutkimuskeskus	Yes	14	58 %
24	The Consumer Complaint Board	517 Kuluttajavalituslautakunta	Yes	1	4 %
25	Energy Market Authority	518 Energiamarkkinavirasto	Yes	1	4 %
26	Employment and Economic Development Centre for Uusimaa	520 Uudenmaan työvoima- ja elinkeinokeskus	Yes	4	17 %
27	Employment and Economic Development Centre for South Savo	522 Etelä-Savon työvoima- ja elinkeinokeskus	Yes	4	17 %
28	Employment and Economic Development Centre for Häme	523 Hämeen työvoima- ja elinkeinokeskus	Yes	8	33 %
29	Employment and Economic Development Centre for Kainuu	524 Kainuun työvoima- ja elinkeinokeskus	Yes	6	25 %
30	Employment and Economic Development Centre for Central Finland	525 Keski-Suomen työvoima- ja elinkeinokeskus	Yes	2	8 %
31	Employment and Economic Development Centre for Southeastern Finland	526 Kaakkois-Suomen työvoima- ja elinkeinokeskus	Yes	4	17 %
32	Employment and Economic Development Centre for Pirkanmaa	528 Pirkanmaan työvoima- ja elinkeinokeskus	Yes	3	13 %
33	Employment and Economic Development Centre for North Karelia	530 Pohjois-Karjalan työvoima- ja elinkeinokeskus	Yes	3	13 %
34	Employment and Economic Development Centre for Northern Ostrobothnia	531 Pohjois-Pohjanmaan työvoima- ja elinkeinokeskus	Yes	6	25 %
35	Employment and Economic Development Centre for North Savo	532 Pohjois-Savon työvoima- ja elinkeinokeskus	Yes	9	38 %
36	Ministry of Trade and Industry	500 Kauppa- ja teollisuusministeriö	No	-	-
37	Finnish Competition Authority	511 Kilpailuvirasto	No	-	-
38	Safety Technology Authority	513 Turvatekniikan keskus	No	-	-
39	Employment and Economic Development Centre for South Ostrobothnia	521 Etelä-Pohjanmaan työvoima- ja elinkeinokeskus	No	-	-
40	Employment and Economic Development Centre for Lappland	527 Lapin työvoima- ja elinkeinokeskus	No	-	-
41	Employment and Economic Development Centre for Ostrobothnia	529 Pohjanmaan työvoima- ja elinkeinokeskus	No	-	-
42	Employment and Economic Development Centre for Satakunta	533 Satakunnan työvoima- ja elinkeinokeskus	No	-	-
43	Employment and Economic Development Centre for Varsinais-Suomi	534 Varsinais-Suomen työvoima- ja elinkeinokeskus	No	-	-
	Ministry of the Interior / Sisäasiainministeriö				
44	The Frontier Guard	201 Rajavartiolaitoksen esikunta	Yes	7	29 %
45	Local Police Helsinki	215 Helsingin kihlakunnan poliisilaitos	Yes	4	17 %
46	The National Bureau of Investigation	216 Keskusrikospoliisi	Yes	10	42 %
47	The Finnish Security Police	217 Suojelupoliisi	Yes	0	0 %
48	Emergency Services College	220 Pelastusopisto	Yes	8	33 %
49	The National Police School Of Finland	222 Poliisikoulu	Yes	8	33 %
50	Directorate of Immigration	232 Ulkomaalaisvirasto	Yes	8	33 %
51	Ministry of the Interior	200 Sisäasiainministeriö	No	-	-
52	State Provincial Office of Oulu	211 Oulun lääninhallitus	No	-	-
53	State Provincial Office of Lapland	212 Lapin lääninhallitus	No	-	-
54	State Provincial Office of Åland	213 Länsstyrelsen på Åland	No	-	-
55	National Traffic Police	218 Liikkuva poliisi	No	-	-
56	Police Technical Centre	219 Poliisin tekniikkakeskus	No	-	-
57	The Police College of Finland	223 Poliisiammattikorkeakoulu	No	-	-
58	The Population Register Centre	230 Väestörekisterikeskus	No	-	-
59	The State Provincial Office of Southern Finland	235 Etelä-Suomen lääninhallitus	No	-	-
60	The State Provincial Office of Western Finland	236 Länsi-Suomen lääninhallitus	No	-	-
61	State Provincial Office of Eastern Finland	237 Itä-Suomen lääninhallitus/Mikkelin toimipaikka	No	-	-
	Ministry of Social Affairs and Health / Sosiaali- ja terveysministeriö				
62	the National Research and Development Centre for Welfare and Health	557 Sosiaali- ja terveysalan tutkimus- ja keh.keskus	Yes	13	54 %
63	National Agency for Medicines	558 Lääkelaitos	Yes	7	29 %
64	Ministry of Social Affairs and Heath	550 Sosiaali- ja terveysministeriö	No	-	-
65	National Public Health Institute	554 Kansanterveyslaitos	No	-	-
66	Radiation and Nuclear Safety Authority of Finland	555 Säteilyturvakeskus	No	-	-
67	The Insurance Supervisory Authority	559 Vakuutusvalvontavirasto	No	-	-
68	National Product Control Agency for Welfare and Health	560 Sosiaali- ja terveydenhuollon tuotevalvontakeskus	No	-	-

Table 13: (Cont'd) Index Scores of all the Government Agencies of Republic of Finland

No	Ministry / Agency	Code	Tilivirasto	Publish	Score	Score%
	Ministry of Labour / Työministeriö					
69	Ministry of Labour	455	Työministeriö	No	-	-
	Ministry of Justice Finland / Oikeusministeriö					
70	The Criminal Sanctions Agency	151	Rikosseuraamusvirasto	Yes	16	67 %
71	Ministry of Justice Finland	150	Oikeusministeriö	No	-	-
	Ministry of Finance / Valtiovarainministeriö					
72	State Treasury	301	Valtiokonttori	Yes	14	58 %
73	Finnish Customs	302	Tullihallitus	Yes	7	29 %
74	The Finnish Tax Administration	305	Verohallitus	Yes	8	33 %
75	Government Institute for Economic Research	306	Valtion taloudellinen tutkimuskeskus	Yes	14	58 %
76	Statistics Finland	321	Tilastokeskus	Yes	12	50 %
77	Ministry of Finance	300	Valtiovarainministeriö	No	-	-
	Ministry of Education / Opetusministeriö					
78	National Archive of Finland	603	Kansallisarkisto	Yes	11	46 %
79	Academy of Finland	605	Suomen Akatemia	Yes	7	29 %
80	National Board of Antiquities	606	Museovirasto	Yes	6	25 %
81	Finnish National Gallery	608	Valtion taidemuseo	Yes	12	50 %
82	University of Helsinki	610	Helsingin yliopisto	Yes	1	4 %
83	University of Jyväskylä	611	Jyväskylän yliopisto	Yes	6	25 %
84	University of Turku	613	Turun yliopisto	Yes	5	21 %
85	The University of Tampere	614	Tampereen yliopisto	Yes	8	33 %
86	Åbo Akademi University	615	Åbo Akademi	Yes	3	13 %
87	University of Joensuu	620	Joensuun yliopisto	Yes	5	21 %
88	Helsinki University of Technology	623	Teknillinen korkeakoulu	Yes	9	38 %
89	Tampere University of Technology	624	Tampereen teknillinen yliopisto	Yes	7	29 %
90	Helsinki School of Economics	626	Helsingin kauppakorkeakoulu	Yes	7	29 %
91	Swedish School of Economics and Business Administration	628	Svenska handelshögskolan	Yes	4	17 %
92	Turku School of Economics and Business Administration	629	Turun kauppakorkeakoulu	Yes	7	29 %
93	University of Vaasa	630	Vaasan yliopisto	Yes	15	63 %
94	Sibelius Academy	631	Sibelius-Akatemia	Yes	12	50 %
95	University of Lapland	632	Lapin yliopisto	Yes	6	25 %
96	Theatre Academy of Finland	633	Teatterikorkeakoulu	Yes	10	42 %
97	National Board of Education	660	Opetushallitus	Yes	3	13 %
98	Ministry of Education	600	Opetusministeriö	No	-	-
99	Governing Body of Suomenlinna	607	Suomenlinnan hoitokunta	No	-	-
100	Academy of Fine Arts	609	Kuvataideakatemia	No	-	-
101	University of Oulu	612	Oulun yliopisto	No	-	-
102	University of Kuopio	621	Kuopion yliopisto	No	-	-
103	Lappeenranta University of Techology	625	Lappeenrannan teknillinen yliopisto	No	-	-
104	The University of Art and Design Helsinki	634	Taideteollinen korkeakoulu	No	-	-
	Ministry of Defence of Finland / Puolustusministeriö					
105	The Finnish Defence Forces	251	Puolustusvoimat/Pääesikunta	Yes	4	17 %
106	Ministry of Defence of Finland	250	Puolustusministeriö	No	-	-
107	Building and Construction Office of the Ministry of Defence	252	Puolustushallinnon rakennuslaitos	No	-	-
	Ministry of Agriculture and Forestry / Maa- ja metsätalousministeriö					
108	Information Centre for Ministry of Agriculture and Forestry	401	Maa- ja metsätalousministeriön tietopalvelukeskus	Yes	8	33 %
109	National Land Survey of Finland	402	Maanmittauslaitos	Yes	11	46 %
110	National Veterinary and Food Research Institute of Finland	403	Eläinlääkintä- ja elintarviketutkimuslaitos	Yes	11	46 %
111	Finnish Forest Research Institute	404	Metsäntutkimuslaitos	Yes	4	17 %
112	Agrifood Research Finland	411	Maa- ja elintarviketalouden tutkimuskeskus	Yes	10	42 %
113	Finnish Geodetic Institute	415	Geodeettinen laitos	Yes	11	46 %
114	Ministry of Agriculture and Forestry	400	Maa- ja metsätalousministeriö	No	-	-
115	The Finnish Game and Fisheries Research Institute	412	Riista- ja kalatalouden tutkimuslaitos	No	-	-
116	The Plant Production Inspection Centre	414	Kasvintuotannon tarkastuskeskus	No	-	-
	Ministry for Foreign Affairs / Ulkoasiainministeriö					
117	Ministry for Foreign Affairs of Finland	130	Ulkoasiainministeriö	No	-	-

Total Number of Ministries	15
Total Number of Agencies Publishing an Annual Report	70
Total Number of Agencies	117

Table 14: Correlations of Items in the Public Sector Disclosure Index

Pearson's correlation (parametric) is in the upper diagonal and Spearman's correlation (non-parametric) is in the lower diagonal. All the coefficients significant at least at 10% level are highlighted. Number of observations varies from 66 to 70. See the specific numbers from the table four. All the correlation tests are two-tailed tests. All the items (except PAGES) are so called dichotomous variables which receive value one (1) if the respective item exists in the annual report and otherwise zero (0). PAGES is annual report's number of pages, PAGESMED receives value one (1) when the annual report has more pages than 32 which is the median of the pages of all the annual reports and otherwise zero (0), SWEDISH is summary in Swedish, ENGLISH is summary in English, VALUES is agency's values, MISSION is agency's mission, CHART is organization chart, PAPER is size of the paper, ECOPAGES is economic pages / review, ECOREV is statement of revenues and expenses, ECOBAL is balance sheet, ECOBUD is statement of budget's realization, ECOVALFM is value for money reporting, ECOTARG is targets and results of the year 2002, ECORISKS is risks and risk management, ECOCTRL is internal control issues, ECOOPER is chargeable operations reporting, SOCPAGES is personnel pages / review, SOCAGE is breakdown of workforce by age, SOCGEN is breakdown of workforce by gender, SOCEDU is breakdown of workforce by educational background, SOCCONT is breakdown of workforce by type of employment contract, SOCABS is absentee rates of employees, SOCTRAIN is personnel training, ENVPAGES is environment pages / review and TOTAL is the total score (max. 24) from the specific index.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1-PAGES		0,6921	0,3877	0,2746	-0,0264	0,1076	0,3561	-0,0406	0,2410	0,1039	0,0243	0,0898	0,2553
Sig. (2-tailed)		**0,0000**	**0,0013**	**0,0257**	0,8335	0,3897	**0,0033**	0,7464	**0,0513**	0,4063	0,8465	0,4736	**0,0386**
2-PAGESMED	0,8664		0,3085	0,1640	0,1501	0,1857	0,4328	-0,0171	0,3702	0,0874	0,1176	0,1348	0,2169
Sig. (2-tailed)	**0,0000**		**0,0117**	0,1881	0,2291	0,1356	**0,0003**	0,8913	**0,0022**	0,4855	0,3470	0,2807	**0,0802**
3-SWEDISH	0,3750	0,3085		0,2829	-0,0352	-0,0095	0,0571	-0,0095	0,0782	-0,0174	-0,0359	-0,2003	0,0420
Sig. (2-tailed)	**0,0019**	**0,0117**		**0,0176**	0,7724	0,9377	0,6387	0,9377	0,5200	0,8865	0,7680	**0,0963**	0,7298
4-ENGLISH	0,2658	0,1640	0,2829		-0,2786	-0,2092	0,0991	-0,0550	-0,0402	-0,1005	-0,1713	-0,1448	0,1087
Sig. (2-tailed)	**0,0310**	0,1881	**0,0176**		**0,0195**	**0,0822**	0,4144	0,6508	0,7411	0,4078	0,1563	0,2316	0,3703
5-VALUES	-0,0186	0,1501	-0,0352	-0,2786		0,4282	0,1557	0,1557	0,0888	0,1599	0,1376	-0,1878	**-0,0859**
Sig. (2-tailed)	0,8823	0,2291	0,7724	**0,0195**		**0,0002**	0,1981	0,1981	0,4646	0,1861	0,2559	0,1196	0,4794
6-MISSION	0,0804	0,1857	-0,0095	-0,2092	0,4282		0,0900	0,1600	0,0913	0,2282	0,2734	0,0526	-0,0232
Sig. (2-tailed)	0,5209	0,1356	0,9377	**0,0822**	**0,0002**		0,4587	0,1858	0,4523	**0,0574**	**0,0220**	0,6653	0,8486
7-CHART	0,4277	0,4328	0,0571	0,0991	0,1557	0,0900		0,3000	0,2830	0,1643	0,1414	0,1754	-0,1859
Sig. (2-tailed)	**0,0003**	**0,0003**	0,6387	0,4144	0,1981	0,4587		**0,0116**	**0,0176**	0,1741	0,2429	0,1464	0,1234
8-PAPER	-0,0715	-0,0171	-0,0095	-0,0550	0,1557	0,1600	0,3000		0,0913	0,1004	0,0094	-0,0702	-0,0232
Sig. (2-tailed)	0,5683	0,8913	0,9377	0,6508	0,1981	0,1858	**0,0116**		0,4523	0,4082	0,9383	0,5638	0,8486
9-ECOPAGES	0,2702	0,3702	0,0782	-0,0402	0,0888	0,0913	0,2830	0,0913		0,2833	0,2238	0,1281	0,1167
Sig. (2-tailed)	**0,0282**	**0,0022**	0,5200	0,7411	0,4646	0,4523	**0,0176**	0,4523		**0,0175**	**0,0626**	0,2906	0,3362
10-ECOREV	0,1256	0,0874	-0,0174	-0,1005	0,1599	0,2282	0,1643	0,1004	0,2833		0,8607	0,2082	0,1803
Sig. (2-tailed)	0,3149	0,4855	0,8865	0,4078	0,1861	**0,0574**	0,1741	0,4082	**0,0175**		**0,0000**	**0,0838**	0,1353
11-ECOBAL	0,1102	0,1176	-0,0359	-0,1713	0,1376	0,2734	0,1414	0,0094	0,2238	0,8607		0,2563	0,1807
Sig. (2-tailed)	0,3782	0,3470	0,7680	0,1563	0,2559	**0,0220**	0,2429	0,9383	**0,0626**	**0,0000**		**0,0322**	0,1344
12-ECOBUD	0,1418	0,1348	-0,2003	-0,1448	-0,1878	0,0526	0,1754	-0,0702	0,1281	0,2082	0,2563		0,0102
Sig. (2-tailed)	0,2562	0,2807	**0,0963**	0,2316	0,1196	0,6653	0,1464	0,5638	0,2906	**0,0838**	**0,0322**		0,9333
13-ECOVALFM	0,1815	0,2169	0,0420	0,1087	-0,0859	-0,0232	-0,1859	-0,0232	0,1167	0,1803	0,1807	0,0102	
Sig. (2-tailed)	0,1446	**0,0802**	0,7298	0,3703	0,4794	0,8486	0,1234	0,8486	0,3362	0,1353	0,1344	0,9333	
14-ECOTARG	-0,0642	-0,2067	-0,0348	-0,1184	0,0712	0,1183	-0,0323	-0,1829	-0,1473	0,2848	0,3043	0,2453	0,1775
Sig. (2-tailed)	0,6083	**0,0958**	0,7748	0,3288	0,5581	0,3292	0,7908	0,1297	0,2236	**0,0169**	**0,0104**	**0,0407**	0,1416
15-ECORISKS	-0,1205	-0,1203	-0,0870	-0,0629	-0,0815	0,0761	-0,1903	0,0761	-0,1390	-0,1043	-0,0897	-0,0334	-0,0575
Sig. (2-tailed)	0,3350	0,3358	0,4741	0,6051	0,5024	0,5310	0,1145	0,5310	0,2511	0,3904	0,4601	0,7838	0,6364
16-ECOCTRL	-0,0067	0,0077	-0,0835	-0,1448	0,0512	0,1754	0,0526	-0,0702	0,1281	0,2082	0,2563	0,3538	0,1528
Sig. (2-tailed)	0,9576	0,9511	0,4921	0,2316	0,6737	0,1464	0,6653	0,5638	0,2906	**0,0838**	**0,0322**	**0,0027**	0,2066
17-ECOOPER	0,1793	0,2536	0,0095	-0,1762	0,0487	0,1200	0,0500	0,0500	0,4199	0,3469	0,3866	0,1930	0,1046
Sig. (2-tailed)	0,1497	**0,0399**	0,9377	0,1446	0,6892	0,3224	0,6810	0,6810	**0,0003**	**0,0033**	**0,0009**	0,1095	0,3890
18-SOCPAGES	0,2393	0,2248	0,0807	-0,0114	0,1167	0,1344	0,2067	0,1344	0,4812	0,2453	0,2339	0,1632	0,2810
Sig. (2-tailed)	**0,0529**	**0,0696**	0,5068	0,9255	0,3361	0,2674	**0,0860**	0,2674	**0,0000**	**0,0407**	**0,0513**	0,1771	**0,0185**
19-SOCAGE	0,2336	0,1841	0,3004	0,1298	0,0035	0,1179	0,3718	0,1179	0,3063	0,1573	0,0855	0,1432	0,1433
Sig. (2-tailed)	**0,0590**	0,1390	**0,0115**	0,2842	0,9769	0,3311	**0,0015**	0,3311	**0,0099**	0,1935	0,4816	0,2371	0,2367
20-SOCGEN	0,2666	0,2424	0,1474	0,0000	-0,0503	0,0000	0,2582	0,0000	0,3536	0,1768	0,1217	0,2265	0,1350
Sig. (2-tailed)	**0,0305**	**0,0499**	0,2232	1,0000	0,6795	1,0000	**0,0309**	1,0000	**0,0027**	0,1432	0,3155	**0,0594**	0,2653
21-SOCEDU	0,3812	0,3644	0,2479	-0,0151	-0,0696	-0,1101	0,2109	0,1467	0,3181	0,3265	0,2810	0,2172	0,1950
Sig. (2-tailed)	**0,0016**	**0,0026**	**0,0385**	0,9010	0,5669	0,3644	**0,0796**	0,2255	**0,0073**	**0,0058**	**0,0185**	**0,0709**	0,1058
22-SOCCONT	0,1655	0,0859	0,1922	0,1029	-0,2020	-0,1683	0,1589	-0,0374	0,2475	-0,0085	-0,0176	0,1312	0,0130
Sig. (2-tailed)	0,1843	0,4926	0,1109	0,3965	**0,0936**	0,1637	0,1888	0,7586	**0,0388**	0,9441	0,8848	0,2790	0,9147
23-SOCABS	0,2169	0,1446	0,1352	-0,0142	0,2513	0,0775	0,1678	0,1678	0,1886	0,2239	0,2069	0,0453	0,1200
Sig. (2-tailed)	**0,0803**	0,2468	0,2646	0,9070	**0,0359**	0,5239	0,1649	0,1649	0,1180	**0,0624**	**0,0857**	0,7097	0,3225
24-SOCTRAIN	0,0589	0,1197	0,2760	0,1321	0,2530	0,1200	0,2600	0,1200	0,2282	0,2191	0,1886	0,0702	0,0232
Sig. (2-tailed)	0,6386	0,3384	**0,0207**	0,2756	**0,0346**	0,3224	**0,0297**	0,3224	**0,0574**	**0,0684**	0,1180	0,5638	0,8486
25-ENVPAGES	-0,0936	-0,2117	-0,1778	-0,1286	-0,0341	0,1557	0,0195	0,0195	-0,0355	0,2843	0,3303	0,1707	-0,1176
Sig. (2-tailed)	0,4547	**0,0879**	0,1408	0,2888	0,7793	0,1981	0,8729	0,8729	0,7703	**0,0171**	**0,0052**	0,1577	0,3324
26-TOTAL	0,5288	0,5327	0,3011	0,0622	0,2254	0,2866	0,4821	0,1531	0,5877	0,5863	0,5692	0,3236	0,2645
Sig. (2-tailed)	**0,0000**	**0,0000**	**0,0113**	0,6088	**0,0607**	**0,0162**	**0,0000**	0,2057	**0,0000**	**0,0000**	**0,0000**	**0,0063**	**0,0269**

Number of Observations Varies from 66 to 70